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ABSTRACT

This document contains 17 papers from a national conference on promoting excellence in research and teaching for business. The following papers are included: "The Development of Innovative Learning Models for Modern Information Technology Professional Education" (Stephen C. Shih); "Entry-Level Information Services and Support Personnel: Needed Workplace and Technology Skills" (Faridah Awang, Marcia A. Anderson, Clora Mae Baker); "An Examination of Disciplinary Web Pages: A Study of Business Education's Presence on the Web" (Lisa E. Gueldenzoph); "Factors Related to Business Education Teachers' Integration of Technology into the Teaching-Learning Process" (Donna H. Redmann, Joe W. Kotrlik, Bruce Douglas); "Fields of Employment Longevity: A Study of Business Graduates" (Nancy Buddy Penner, Victoria Falconer, Harry Nowka); "Impact of Information Technologies on Faculty and Students in Online Distance Education" (Jensen Zhao, Melody Alexander, Heidi Perreault, Lila Waldman); "The Impact of Instruction on the Use of On-line Help on Computer Novices' Ability Tasks" (Joel A. Whitesel); "Perceptions about Three Indigenous English-Language Accents from Prospective and Practicing Argentine Providers of Business-Related Language Services" (Diana J. Green, James Calvert Scott, David D. Rosewarne); "Students' Perceptions of Cyber-Cheating" (Ronald F. Fulkert, Konnie G. Kustron); "A Survey of Exporting Activities with Implications for International Business Instruction" (Les R. Dlabay); "Developing a WebQuest" (Margaret J. Erthal); "Enhancing Education/Workplace Instructional Methods" (Carol Blaszczynski, Diana J. Green); "Innovative Activities for

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Business Communication" (Sandy Braathen, Lila Prigge); "Teaching Communications Online Using the Master Teacher Model" (William J. Wilhelm); "Conducting Longitudinal Research" (Michael Bronner); "E-Commerce Education: A Comparison of Employers' and Business Educators' Perceptions" (Lisa E. Gueldenzoph); and "Master Teachers Helping Future Teachers" (Margaret J. Erthal, Randall E. Smith). Most papers contain substantial bibliographies. (MN)

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PART I
REFEREED RESEARCH PAPERS

The Development of Innovative Learning Models for Modern Information Technology Professional Education

Stephen C. Shih
Southern Illinois University

Abstract

This research report identifies several important trends driving the need for an innovative learning model for Information Technology (IT) professional education. Addressing these trends, a 3-dimension learning model is proposed involving innovative course content design and delivery of IT curriculum to achieve effective learning. The three dimensions are (i) innovative design of course content and lab projects on integrated enterprise information systems (EIS) development, (ii) multidisciplinary joint applications design (MJAD) practice, and (iii) dynamic learning and instructional model. To support the EIS development and MJAP practices, an EMC^2 learning and instructional framework is proposed for a learning environment characterized by ***E***-Learning ***M***ultimedia, ***C***ollaboration, and ***C***ustomization.

Introduction

The U.S. businesses are now experiencing a fierce world-wide competition. The multiplied competitive pressure from various directions in the world has meant the decline in market shares for U.S. businesses. For example, the fact that the overall productivity in U.S. manufacturing industries has been a disappointment in recent years magnifies this tension of marketing race. This productivity dilemma has been realized as a result of a failure to coordinate effectively the operations of the individual pieces in the entire supply chain and enterprise environment to form a synergistic whole. Consequently, it is advocated in this research report that the whole enterprise environment should be viewed from a new perspective instead of sticking with the orthodox ways of management (Cypress, 1993). An innovative way of restructuring IT curricula is then indispensable to reflect this need.

It is perceived that some major trends will reshape the modern workplace (Hammer, 1993; Hewitt, 1995). Among those, some important ones are the traditional hierarchical organization will give away to a variety of organizational forms, the vertical division of labor will be replaced by a horizontal division, and the paradigm of doing business will shift from making a product to providing a service (Byrne, 1993). This change in the organizational structure is dramatically impacting the need for education and training. Rather than work all aspects internally within a corporation, increasingly companies are developing a web of business trading and outsourcing partners that can provide specific expertise at the necessary time. In such an environment, companies are paying more attention on how to best collaborate with their business partners to accomplish business objectives while increasingly focusing on their core competency (Alavi et. al, 1995). To reflect this prospective workplace changes, how to train the right kind of IT professionals to fit in the marketplace is critical and important.

Modern businesses have more global locations in different geographical zones and employ larger numbers of workers with diverse cultural backgrounds than ever. Therefore, more information has to be delivered in increasingly larger organizations and super-hybrid supply chains. Companies worldwide are now searching for more innovative and efficient ways and learning models to deliver training to their geographically dispersed workforce.

Some technological changes have significantly increased complexity and velocity of work environment. Technology such as Internet has changed the way we live, work, think, and learn (Kiechel, 1993). Today's IT professionals have to absorb more information in a shorter amount of time and learn new skills in a faster pace than ever before. New technologies and management concepts are emerging with accelerating speed. Furthermore, as life spans of products and services in modern businesses continue to shorten, earned skills and knowledge can quickly become obsolete. As a result, there is great urgency to rapidly and efficiently deliver knowledge and skills through just-in-time education and training (Lee, 1995; Leidner, 1995).

When it comes to developing integrated enterprise information systems for sustainable cross-organizational IT solutions, students are required to be capable of analyzing the underlying problems and business requirements from multidisciplinary perspectives (Aguiar and Weston 1995). Therefore, the IT students need to learn not only about their own disciplines, but also they need to be equipped with adequate domain knowledge in other fields of expertise which can contribute to a total IT solution. Consequently, as entering the real workplace, the graduates will be able to work collaboratively and effectively with the professionals from different segments of an organization toward common business goals. One of the integral components of the course content design is to develop a series of case assignments for students to work together as a multidisciplinary team for enhancing their joint applications design and collaborative skills.

Research Objectives

To address these trends and challenges, an innovation in learning models and new IT curriculum development is indispensable. In the mean time, a new IT discipline should emerge to carry out the mission. The innovative learning model requires the consolidation of knowledge from different disciplines, including information systems, computer science, business management, industrial engineering, systems engineering, and production management, The courses in the new IT curriculum will not just a simple junction of knowledge in those disciplines but a synthesis of various knowledge by using a *holistic* approach. In addition, a critical thinking process is necessary to explore new disciplines and concepts for IT curriculum development.

The project proposes a 3-dimension framework (Figure 1) involving innovative course content design and knowledge delivery of IT curriculum to achieve measurable enhancement of effectiveness in both teaching and learning. The three dimensions are

(1) innovative design of course content and lab projects on EIS development,

(2) multidisciplinary joint applications design (MJAD) practice, and

(3) dynamic learning and instructional model.

The first dimension focuses on four aspects of integration tasks in EIS: iCASE integration, client/server applications integration, enterprise applications integration, and supply chain integration (Saad, 2002). MJAD is to establish an interdisciplinary environment for students to learn how to synthesize and integrate information and to tackle multidisciplinary problems by working together as a team. An EMC^2 learning and instructional model is proposed to build a learning environment with the following characteristics: ***e***-Learning ***M***ultimedia, ***C***ollaboration, and ***C***ustomization.

The objectives of each dimension are listed as below:

Dimension 1: Innovative Design of Course Content and Lab Projects on EIS Development

- To tightly associate theories and knowledge learned to hands-on experience with innovative lab projects performed in a web-enabled interactive, collaborative environment.

- To prepare IT students as Enterprise Information Systems Analysts & Developers which are in high demand by consultants and companies of all sizes and all kinds.

Dimension 2: Multidisciplinary Joint Applications Design Practice

- Using a concurrent engineering approach (Shina, 1991; DeLorge, 1992), to provide students with opportunities to enhance their collaborative skills and joint applications design experiences in a multidisciplinary environment (Chinowsky, 1995).

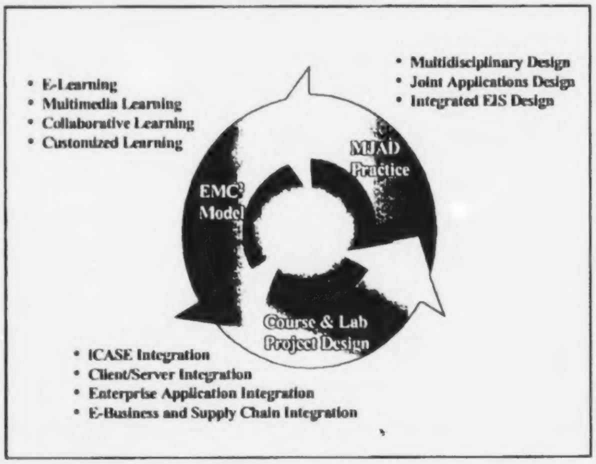
Dimension 3: Dynamic Learning and Instructional Model

- To allow students to use the Web as an exploratory tool to access a plethora of learning materials and resources.

- To enable creative approaches to learning and to foster collaboration and a sense of community.

- To enable personalization of content and allow students to choose the way in which they best learn.

Figure 1
Proposed Instructional and Learning Framework


• Multidisciplinary Design
• Joint Applications Design
• Integrated EIS Design
• E-Learning
• Multimedia Learning
• Collaborative Learning
• Customized Learning
MJAD Practice
EMC^2 Model
Course & Lab Project Design
• iCASE Integration
• Client/Server Integration
• Enterprise Application Integration
• E-Business and Supply Chain Integration

The Instructional and Learning Framework

Innovative Design of Course Content and Lab Projects on EIS Development

The course content and lab assignments will focus on developing enterprise information systems in four integration phases:

Phase I: iCASE integration
The newly designed courseware will integrate with an Integrated Computer Aided Software Engineering (iCASE) tool. With this setup, students can develop conceptual, analytical, and practical skills in modeling key EIS building blocks (data, business pro-

cesses, interfaces, and networks). Results of this effort will be further used to determine how the essential business processes can be reengineered.

Phase II: Client/Server Applications Integration
The lab learning content involves integration of front-end desktop office software (*Microsoft Office XP*) and back-end server packages (*Microsoft BackOffice*) via the use of *ActiveX Data Objects (ADO), Open Database Connectivity (ODBC)*, and *Active Server Page (ASP)* technologies as well as common visual development tools (e.g., *Microsoft Visual Basic*) to develop both desktop and back-end applications in a cross-enterprise, distributed client/server computing environment. In addition, the object technology will be embraced for students to learn to develop custom client/server applications by utilizing object oriented tools and objected-oriented systems design methodologies.

Phase III: Enterprise Applications Integration (EAI)
The lab assignment content will expand beyond its concentration on building "islands of automation." Instead, the students will be learning to develop seamlessly integrated enterprise applications by adopting Distributed Object Architecture and Web-based component solutions (such as *Distributed Common Object Model - DCOM, Common Object Request Broker Architecture - CORBA*, and *eXtensible Markup Language - XML* technologies).

Phase IV: E-Business and Supply Chain Integration (e-SCI)
Student will realize desired skills in building integrated e-business applications via the implementation of customer relationship management (CRM), enterprise resource planning (ERP), Computer Integrated Manufacturing (CIM) (Bedworth et al, 1991), intelligent decision support systems for advanced planning and supply chain optimization.

Multidisciplinary Joint Applications Design (MJAD) Practice

Global competition and technological innovations demand more efficient decision making, better customer service, and faster time to market. Achieving these requires integrated systems that work together to provide the information you need when you need it, regardless of where it resides. Enterprise Information Systems (EIS) tying all major business areas together provides a fully integrated, company-wide business and information solution. EIS also streamlines the business processes of information management by integrating finance, sales & marketing, engineering design, production planning, manufacturing, distribution, customer service, and administration systems into a single information resource.

When it comes to developing integrated enterprise information systems for sustainable cross-organizational IT solutions, students are required to be capable of analyzing the underlying problems and business requirements from multidisciplinary perspectives. As modern IT professionals, therefore, the IT students need to learn not only about their own disciplines, but also they need to be equipped with adequate domain knowledge in other fields of expertise which can contribute to a total IT solution. Consequently, as entering the real workplace, the IT graduates will be able to work collaboratively and effectively with the professionals from different segments of an organization toward common business goals. One of the integral components of the course content design is to develop a series of case assignments for students to work together as a multidisciplinary team for enhancing their joint applications design and collaborative skills (Silver, 1995; Slater, 1995).

The integrated *Enterprise Information Systems (EIS)* solutions are characterized by multifaceted, interdisciplinary problems that require teams comprised of systems analysts, systems architects, systems engineers, database specialists, networks engineers, computer programmers, and project managers. As a team, they need to cooperate throughout the planning, analysis, design, building, and testing processes to ensure that all business and information systems requirements are satisfied coherently. In contrast to this real-world professional environment, IT educational settings are mostly confined to strict disciplinary boundaries which may greatly hamper the IT graduates from successfully carrying off their jobs in real world (Gunasekaran, 2002). To address this issue and challenge, adequate interactions within the framework of the IT curriculum is indispensable. The approach introduced in this proposal aims to reduce the disciplinary boundaries and to establish interdisciplinary environment for students to learn how to synthesize and integrate information, to work together in teams, and to attack open, multidisciplinary problems.

To put students' knowledge and skills into practice, a series of collaborative project-based laboratory assignments should be developed as a subsequent effort:

- Students will work on a series of EIS design and SA&D problems, each progressively more complex.
- Students will learn a comprehensive ERP & SCM solutions for hybrid environments like custom/job shop, engineer-to-order, make-to-stock and make-to-order.
- Developing ERP business and manufacturing applications for different manufacturing environments, such as a discrete, repetitive, or configure-to-order environment. Provide students with basic knowledge in all areas of engineering, planning, and production within a multi-company environment.
- To incorporate the best of mainstream information technologies
- To orchestra their reasoning and decision making processes
- Adopt a simulation-based implementation methodology. Students receive their training in realistic simulations of "pilots." The pilot environment more accurately

simulates the real world, so the information systems can be more precisely fine tuned to the business requirements.

Dynamic Learning and Instructional Model

A EMC^2 model is proposed as a mechanism to achieve highly effective learning and instructional environment:

- *E*-Learning: Web-Enabled Interactive Learning
- *M*ultimedia Based Learning
- *C*ollaborative Learning
- *C*ustomized Component-based Content Design

E-Learning: Web-Enabled Interactive Learning

E-Learning is the convergence of learning, networking technology and the Internet technology for Web-enabled interactive learning. Another important feature of e-Learning is the capacity of just-in-time content management which permits instructors to update learning materials across the entire network instantly. This keeps content fresh and consistent and gives students immediate access to the most current information. Components of e-learning include content assembly and delivery in multiple formats, management of the learning experience, and a networked community of learners and instructors. The learning efficiency and convenience provided by synchronous content delivery will be greatly improved.

Microsoft Learning Resources iNterchange (LRN) will be adopted to create interactive learning materials. Primarily, Microsoft LRN is a commercial implementation tool for content assembly (not content authoring). Being compliant with the *Instructional Management Systems Project* (IMS) *Content Packaging Specifications (*http://www.IMSProject.org), LRN adopts XML-based open standard for building online training and education applications. LRN is used to generate *learning resources* rather than courses. (A learning resource is any collection of one or more resources that describes a concept that can be taught independently of other concepts. Furthermore, it contains the metadata that makes it searchable.) With learning resources you can divide content into pieces that can be moved, removed, and reused. The materials that constitute a learning resource for IT courses can be created by packaging the materials in the form of Macromedia Authorware (a content authoring tool), Microsoft PowerPoint presentations, Microsoft Word documents, HTML pages, and digital audio files of lectures. All the content files of various formats (e.g., .ppt, .doc) can be included without converting them to another format. With LRN, learning resources can be constructed with a structure and be easily changed by adding, removing, and rearranging the content. Using LRN allows course developers to shift their focus from technology to pedagogy.

*M*ultimedia Based Learning

To take the learning experience to a whole new level, the newly designed courseware will facilitate real-time multimedia presentation and demonstration, not just flat text description or simply a PowerPoint slide show. Through proper use of animation, visual/audio presentation, graphics, and text, a multimedia-based presentation proves to be a powerful way to assist students in grasping the essence of certain problematical concepts or intricate processes in information systems design and development (such as the notion of data analysis and normalization for a well-structured database design).

Macromedia eLearning Studio will be used to create Web-enabled multimedia interactive course content. This content authoring tool addresses the full range of learning applications and delivery requirements, from text-and-graphics tutorials to training simulations with audio, animation, and video. The multimedia content can be designed to accommodate individual learner diversities.

*C*ollaborative Learning

Stretching beyond instructor-lead training, one of this project efforts is to establish a real-time, on-line collaborative learning environment. The proposed courseware will be integrated with *Microsoft Outlook XP* and *Exchange XP* to provide a means allowing students to collaborate with other individuals or groups As one of the viable communication mechanisms, Microsoft NetMeeting allows groups to have collaborative efforts working on the same task (system modeling, design documentation, etc.) via virtual discussions and information sharing. A group scheduling feature can also be employed for effective project management.

*C*ustomized Component-based Content Design

Customized content to address different individual learning needs is more desirable than the one-size-fits-all courseware. To harness the many advantages of e-learning, another project effort will focus on standardized learning components/objects design, content personalization and content aggregation, and portal-based learning. As a result, students are allowed to access a variety of course content, knowledge communities and tools based on their student profiles.

Evaluation Procedures for Research Results

The following procedures have been established to assess the results from implementing the proposed framework and to measure to what extent the project objectives have been achieved:

- Procedures of learning experience tracking and management: to validate students' learning experiences and track performance and learning curve.

- Measurement parameters for the learning experience on growth in performance and competencies. (These critical measures will be naturally linked to the impacts indicated previously. When addressing performance gains associated with the proposed learning model, specific examples and statistics of learning improvement will be provided.)

- Procedures of competency and skills assessment: to evaluate an individual's competency of different skills. Other integral components: company skills analysis, skills gap analysis, and mapping of learning events to skill gaps.

- Quantitative and qualitative evaluations on the following areas:
    - Course content - relevancy, adequate body of knowledge, organization.
    - Use of computer-aided learning technology and environment - concerns, familiarity, problems, and aspects.
    - Classroom atmosphere.
    - Quantity and quality of interaction with other students and with instructor.
    - Lab projects assignments – practicality, usefulness, degree of difficulty, etc.

Conclusions

To meet today's fast-paced culture and more sophisticated market needs, the proposed learning model can provide IT students with the ability to turn change into an advantage in the job market through the better-quality, more effective learning experiences. With on-line collaborative and multidisciplinary setup, traditional IT students on campus will be able to team up with corporate students in conducting lab projects. As a result, on-campus students can greatly expand their perspectives through gaining business insights and intelligence of the real-world.

Due to the fact that the traditional educational setting is now competing with numerous newly developed e-learning programs across the country, tremendous pressures emerge for many universities and colleges in recruiting and retaining quality students. As an ultimate goal, the proposed work will facilitate the academic institutions to act ahead and be equipped with a viable mechanism to recruit not only on-campus students but also attract off-campus and distant learning students everywhere geographically in the country, even in the whole world.

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Entry-Level Information Services and Support Personnel: Needed Workplace and Technology Skills

Faridah Awang
Eastern Kentucky University

Marcia A. Anderson
Clora Mae Baker
Southern Illinois University Carbondale

Abstract

This research identified the perceived importance of workplace and technology skills needed for entry-level information services and support personnel according to all (38) Illinois Fortune 500 human resource managers, all (36) Illinois public/private university information systems professors, and randomly selected (120 of 229) Illinois community college information systems instructors. Specifically addressed were: (a) the ranking of essential skills; (b) differences in perceived importance according to respondent groups; and (c) desired IT certifications according to employers.

Introduction

Since the globalization of commerce and industry and the explosive growth of technology in the job, America's economy has been reshaped by the continued and increased predominance of the information technology (IT) industries. IT innovation is clearly one of the key factors that stimulated the demand for skilled labor that employs technology. IT has been an important element in promoting many broad restructuring and strategic changes in service industries (National Academy of Sciences, 1994). As a result, the widespread use of IT in services has had a profound effect on employment patterns.

The advancement and dissemination of information technology has expanded and shifted the labor market for IT workers. New skills are in demand and IT occupations are evolving in new directions. This has made it difficult for employers to hire the numbers of adequately trained IT workers they need (Office of Technology Policy, 1997). Several studies of workplace skills have found that employers are requiring their employees to have a higher level of technical skills in order to work successfully in technologically-oriented business environment (Agency for Instructional Technology, 1992; Carnevale, 1988; Tuttle, 1988). Regan (1996) suggested that workers in the 1990s and beyond are expected to be competent in using technology effectively because employers will hire employees who can demonstrate this skill.

The Bureau of Labor Statistics forecasted employment trends through the year 2008 and predicted the demand for computer support specialists will grow by 102% between 1998 and 2008 (Bureau of Labor Statistics, 2000). Jobs in these fields offer great potential for job security and higher salaries. Furthermore, a recent study found that technical support people will be in greatest demand by IT and non-IT companies – one-fourth of all new positions over the next 12 months (Information Technology Association of America, 2001).

Objective of the Study

This study sought to determine the perceived importance of the workplace and technology skills needed for entry-level information services and support personnel. Specific research questions addressed: (a) the perceived importance of workplace and technology skills, (b) differences in perceived importance according to respondent groups, and (c) desired IT certifications according to employers.

Literature Review

The national summit on 21st Century skills for 21st Century jobs called for a business and industry partnership with education to face the challenge of preparing skilled workers in order to compete in a changing economy. An estimated $60 million plan was established to help train American workers for high-skill jobs in industries facing skill shortages. Most of these high-skill jobs are in the IT industries. According to the International Data Corporation (IDC), an established market research firm, there were 722,158 unfilled IT jobs in the US in 1999, and there will be 846,901 by 2002 (Edwards, 2000).

Research indicated that people on the fast career track were those who knew how to use a computer to do their jobs more efficiently, who could present ideas cogently, and who worked well in teams (Labich, 1993). By contrast, those newly unemployed and those who did not receive pay raises are often the people who do not have such skills (Lord, 1992). This is supported by Gates (1995) who emphasized that in a changing world, education is the best preparation for being able to adapt; as the economy shifts, people who are adequately educated will tend to do best. Gates' advice is to "get a formal education and then keep on learning" (p. 254).

Those who follow IT career development and training have recognized three emerging trends: Business skills will become as important as technical ones in defining the successful IT professional; new technologies, such as web-based learning, will likely supplant classroom training for most corporate staff; and IT professionals must see education as a continuing and self-directed process. According to a 1998 report from the Gartner Group, by 2002, the skills required of internal IT-related staff will shift from 65% technology skills to 65% business and IT management skills (Rath, 1999). Certification by job applicants through a vendor or industry certification program remains of moderate importance. According to a recent study, IT companies viewed certifications at least as important as a bachelor's degree; non-IT companies placed certifications slightly below a bachelor's degree in importance (Information Technology Association of America, 2001).

During the past several years, the skills needed in the workplace have changed significantly. This is supported by several major studies on the importance of workplace skills. Technical skills remain important, but, increasingly, employers recognize that it is another category of skills that are crucial to a worker's ability to work "smarter, not harder." (Imel, 1999, p. 1). These skills go by a number of labels including "soft skills," "core skills," "non-technical skills," "essential skills," "generic skills" and "new basics" (Alpern, 1997; Murnane & Levy, 1996). These skills are required for organizations to adopt new forms of organization and management in which workers operate in teams with greater autonomy and accountability (21st Century Skills for 21st Century Jobs, 1999).

A number of factors have brought about the development of this set of employability competencies. In 1959, jobs were classified as 20% professional, 20% skilled, and 60% unskilled; by 1997, however, the percentages for skilled and unskilled had reversed, with 60% of the jobs classified as skilled and only 20% as unskilled (21st Century Skills for 21st Century Jobs, 1999). This reversal is reflected in the demands of many workplaces that now place an emphasis on high performance jobs that require high skills (Murnane & Levy, 1996). Many employers have been unable to find the employees they need; however, when they express dissatisfaction with job applicants, it is not on the basis of their technical skills but rather because of their competencies in other areas (Alpern, 1997; Murnane & Levy, 1996). The following skills are mentioned most frequently: knowing how to learn; competence in reading, writing, and computation; effective listening and oral communication skills; adaptability through creative thinking and problem solving; personal management with strong self-esteem and initiative; interpersonal skills; the ability to work in teams or groups; leadership effectiveness; and basic technology skills (Clagett, 1997; McNabb, 1997; Murnane & Levy, 1996; Oliver, et al., 1997). These skills, once reserved for those in management, are now considered necessary for individuals at all levels of employment (Clagett, 1997).

Research Procedure

Population and Sample

Using a descriptive research design with the survey method, the study was conducted with all (39) Illinois Fortune 500 human resource managers, all (36) Illinois four-year information systems college instructors from public and private universities, and randomly selected 120 out of 229 Illinois information systems community college instructors. The total for the three groups was 195. These groups were chosen for participation in the survey based upon their reputations as leaders and teachers in the field of business and technology. The respondents were asked to rate the importance of workplace and technology skills through a Likert scale.

Data Gathering Instrument

The research instrument used in this study was based on the Ohio Information Technology Competency Profile (1999). The researcher developed a competency list based on essential skills needed in information services and support personnel as reported by the Ohio Information Technology Task Force. Then, three systems analysts specializing in information systems, one human resource manager, four instructors from four-year colleges specializing in management information system, and four instructors from community colleges specializing in business technology and computer systems revised the final list of competencies. The instrument was further tested for reliability by using a Cronbach reliability coefficient. The results revealed a reliability of .93 ($r=.93$) for the final data-gathering instrument.

Data Collection Procedure

Data collection instruments (cover letter, survey instrument, and a self-addressed envelope) were sent to Illinois Fortune 500 human resource managers, 4-year information systems college instructors and information systems community college instructors in Illinois. One company replied with a letter explaining that they were unable to respond to individual surveys of any sort, reducing the sample to 194. At the end of three follow-up periods, 116 (59.8%) were returned. All 116 responses were used in the data analysis process.

Data Analysis

Data were analyzed using frequencies, percentages, means, standard deviations; ANOVA and Independent T-Test were used to determine relationships, and the Post Hoc Tukey test was used to identify significant relationships.

Findings

The highest responses were received from community college instructors (71 of 120 or 59%), followed by human resource managers (19 of 38 or 50%), and four-year college instructors (26 of 36 or 72%). The distributions for four-year colleges were: Four-year public colleges (15 of 22 or 68%) and four-year private colleges (11 of 14 or 78%). The largest group of employers (26.32%) represented manufacturing companies; 21.05% were from financial services, insurance, and real estate; 10.53% from telecommunication companies; 10.53% from wholesale/retail trade; 5.26% from food, media, consumer goods, transportation, consulting, and utility companies.

Research Question Results

Responses (Table 1) showed that "read and follow instructions," "listen and follow directions," "communication," "adapt to change" and "team work" were essential for information services and support personnel. In addition, human resource managers ranked "customer relations" and "time management" as the sixth and seventh essential skills. Technology skills in demonstrating the knowledge of "classes of software associated with information systems," "the hardware and software associated with information systems," "basic data communications components and trends," "utilizing Internet services" and the ability to "perform varieties of computer application software functions" were considered essential by the groups surveyed.

Table 1
The Workplace and Technology Skills as Perceived by Three Groups

	Comm. College			College Inst.			HR Managers		
Skills	Rank	M	SD	Rank	M	SD	Rank	M	SD
Read and follow instructions	E	3.87	.34	E	3.88	.43	E	4.00	.00
Listen and follow directions	E	3.83	.38	E	3.88	.43	E	4.00	.00
Communication	E	3.76	.55	E	3.85	.37	E	3.84	.37
Team work	E	3.63	.57	E	3.65	.63	E	3.74	.45
Customer relations	HD	3.04	.78	D&E	3.00	.85	E	3.84	.37
Time management	HD	3.37	.54	HD	3.35	.63	E	3.79	.42
Classes of software assoc. with IS	E	3.42	.71	E	3.38	.75	E	3.74	.45
Hardware and software components assoc. with IS	E	3.41	.67	E	3.54	.65	E	3.58	.69
Basic data communications components and trends	E	3.44	.65	HD	3.27	.53	E	3.53	70
Perform varieties of computer application software functions	HD	3.25	.67	HD&E	3.38	.64	E	3.32	.75
Quality assurance	HD	3.13	.74	E	3.12	.87	E	3.53	.51
Utilize Internet services	E	3.34	.74	E	3.31	.84	HD	3.16	.76
Technical writing and doc.	HD	2.89	.77	HD	3.23	.59	HD	3.16	.76
Install/configure software prog.	HD	3.08	.84	HD	3.12	.71	HD	3.26	.45
Design, develop, and analyze IS projects	D	2.36	.93	HD	3.15	.73	HD	2.84	.69

continued

	Comm. College			College Inst.			HR Managers		
Skills	Rank	M	SD	Rank	M	SD	Rank	M	SD
Programming language concepts/theories	HD	2.80	.86	HD	3.12	.71	HD	3.05	.62
Applied programming language	D	2.59	.95	HD	3.08	.74	D	2.58	.69
IS project management	D	2.13	.83	HD	3.08	.84	D	2.47	.96
Economic and business concepts	D	2.46	.67	HD	3.00	.63	HD	2.79	.92
Apply Dev. of Life Cycle	D	2.20	1.02	D&E	3.00	.85	HD	2.37	.76
Install and troubleshoot computer systems	HD	2.70	.93	HD	2.96	.87	D	2.63	.68
Evaluate application software packages	HD	2.75	.73	HD	2.96	.72	HD	2.79	.63
Network architecture	D	2.37	.76	D	2.88	.82	HD	2.63	.60
Social, ethical, and legal issues	HD	2.77	.78	HD	2.88	.86	HD	3.00	.82
Provide and analyze computer support and training	D	2.66	.83	D&HD	2.88	.78	D	2.68	1.06
Explore the future of IT	HD	2.65	.88	HD	2.85	.73	HD	2.53	.96
Basic network operating systems	D	2.49	.83	D	2.85	.83	HD	3.32	.58
Common network comp. platforms	HD	2.79	.81	D	2.85	.83	HD	3.26	.65
Perform system installation and maintenance	HD	2.52	.83	HD&E	2.81	1.02	D&HD	2.74	.73
Impact of IT on society	HD	2.54	1.03	D	2.77	.99	LD&HD	2.21	1.03
Perform system admin. and control	D	2.18	.68	E	2.73	1.08	D	2.32	.89
Perform varieties of DBMS activities and administration	D	2.11	.87	D	2.69	1.01	D	2.47	.96
Maintain security requirements and operating systems	D	2.45	.86	D	2.69	.93	D	2.53	.96
Management and supervisory	D	2.03	.70	HD	2.69	.84	LD	2.21	1.23
Telecommunication networks	D	2.21	.70	D	2.65	.80	D	2.32	.67

continued

	Comm. College			College Inst.			HR Managers		
Skills	Rank	M	SD	Rank	M	SD	Rank	M	SD
Data warehousing	D	2.20	.86	HD	2.65	.75	D	2.68	.75
Hardware design, operation, and maintenance	HD	2.62	.80	D	2.65	.89	HD	2.95	.62
Interconnection of networks	D	2.37	.78	D	2.62	.90	HD	2.63	.96
Design web page or web hosting	HD	2.46	.94	D	2.54	.71	D	2.37	.50
Install infrastructure systems	D	1.89	.84	D	2.46	1.10	D	2.68	1.06
Perform varieties of network mgmt. activities & procedures	D	2.10	.72	D	2.42	1.03	D	2.53	1.02
Financial mgmt. functions	D	2.08	.77	D	2.27	.67	D	2.21	.98

Note. LD=Less Desired; D=Desired; HD=Highly Desired; E=Essential.

A one-way ANOVA analysis indicated there were statistically significant differences between groups in their perceptions on the importance of workplace and technology skills. A Post-Hoc Tukey test was further used to compare perceptions among the groups. According to the findings presented in Table 2, there were statistically significant differences between four-year college instructors and community college instructors with a *p* value of .046 and a mean difference of .262.

Table 2
Post-Hoc Tukey Test Analysis Among the Three Groups

		Mean Diff		95% Confidence Interval		
(I) Group	(J) Group	(I-J)	Std. Err	*p*	Lower	Upper
4-year	HR	.044	.1090	.912	-.214	.303
	CC	.262*	.1090	.046*	.003	.521
4-year	CC	.217	.1090	.117	-.040	.476

*Note.**p<.05.

According to findings in Table 3, statistically significant differences were found between community college instructors and four-year college instructors regarding their perceptions on the following skills: Technical writing and documentation, economic and business concepts, management and supervisory, applied programming language, network architecture, data warehousing, telecommunications networks, infrastructure systems, Database Management Systems activities and administration, Development of Life Cycle (DLC), design, develop, and analyze information systems projects, systems administration and control, and IS project management. Community college instructors showed lower scores than 4-year college instructors.

Table 3
Independent T-Test Analysis on Workplace and Technology Skills Between the Two Groups of Educators

Skills	*df*	*F*	t	*p*
Technical writing and documentation	95	.319	-2.071	.041*
Economic and business concepts	95	6.124	-3.526	.001*
Management and supervisory	95	3.082	-3.936	.000*
Applied programming language	95	6.331	-2.352	.021*
Network architecture	95	.314	-2.916	.004*
Data warehousing	95	.103	-2.406	.018*
Telecommunications networks	95	2.550	-2.669	.009*
Install infrastructure systems	95	6.879	-2.737	.007*
Perform varieties of DBMS activities and administration	95	2.738	-2.779	.007*
Design, develop, and analyze IS projects	95	3.499	-3.821	.000*
Apply Development of Life Cycle	95	1.148	-3.574	.001*
Perform systems admin. & control	95	14.792	-2.964	.004*
Manage IS project management	95	.060	-4.984	.000*

Note. *p<.05.

Respondents (Table 4) indicated "A+ - PC Support Service" as the most desired certification they sought when hiring information technology professionals, followed by "CNE – Certified Novell Engineer" and the "MCP – Microsoft Certified Professional."

Table 4
Frequencies on Desired Information Technology (IT) Certifications

Certification	Frequency	n = 16	Valid Percent
A+ - PC Support Service	4		25.0%
CNE – Certified Novell Engineer	3		18.8%
MCP – Microsoft Certified Professional	3		18.8%
CNA – Certified Novell Administrator	2		12.5%
MCSE – Microsoft Certified Systems Engineer	2		12.5%
ODBA – Oracle Database Administrator	2		12.5%

Note. Respondents could check more than one certification. Only 16 out of 19 respondents answered this question.

Conclusions

The following conclusions may be drawn based on the findings of this study:

1. Non-technical and soft-skills, especially "read and follow instructions," "listen and follow directions," "communication," "adapt to change," "team work," "customer relations" and "time management" remain essential in the workplace even in the information technology fields.
2. Educators and employers were in congruence in their perceptions that soft-skills along with basic technology skills, especially in demonstrating the knowledge of "classes of software associated with information systems," "the hardware and software associated with information systems," "basic data communications components and trends," "Internet services" and the "computer application software functions" should be emphasized and incorporated into the classroom.
3. The emphasis given in information systems curriculum between community colleges and 4-year colleges may have varied thus creating significant differences in their perceptions on certain workplace and technology skills.
4. Graduates with Information Technology (IT) certificates may have the entry way to jobs that provide the experience for them to become highly proficient IT workers.
5. Findings of this study are consistent with several major studies in the area of workplace and technology skills.

Recommendations

1. Ongoing research should be conducted to determine the needs of business and industry in order to ensure that information systems curriculum meets the needs of employers.
2. Research should be carried out to identify current and emerging technological advances in the workplace so that students and educators are aware of these needs and changes.
3. Research should be conducted to compare perceptions of recent graduates in information systems and their employers concerning basic workplace and technology skills.
4. Studies on information systems curriculum and the requirements of the job markets should be made in order to identify to what extent the curriculum adequately prepares students for the workplace.
5. Research should be conducted on the impact of technology in education and how high schools, community colleges, and 4-year colleges incorporate these technology advances into the classroom.
6. Research should be conducted to compare Information Technology (IT) certified and non-certified professionals regarding their perceptions on specific workplace and technology skills needed in the work world.
7. A similar study using a larger sample of Fortune 500 human resource managers should be conducted to determine the adoption of technology in their organizations.
8. Encouragement should be given to information systems students to seek specific certifications that are considered highly desirable by business and industry.
9. With the constant need for information technology professionals, information systems program faculty must recruit and retain all types of students at the high school, community college, and 4-year college levels to major in this field.
10. Teachers should integrate technology into a variety of subject areas. This effort may engage students in the learning process since it includes opportunities for problem solving and creative thinking regarding technology use.

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An Examination of Disciplinary Web Pages: A Study of Business Education's Presence on the Web

Lisa E. Gueldenzoph
North Carolina A&T State University

Abstract

During the 1990's, the World Wide Web evolved from a novelty to a necessity for information gathering, data sharing, and communicating. Today's students depend on the Internet (perhaps more than we would like them to) for their information needs, and they often use the Web to "virtually visit" prospective colleges and universities. Therefore, the Web sites we build to describe our business education programs become marketing tools. In the second year of this continuing study, the goal is to examine business education programs' Web sites and report descriptive findings about business education's image on the Web.

Introduction

In today's Digital Age, Web sites are becoming more important than business cards. Nearly everyone who is "digitally connected" uses Web sites to find contact information, to learn more about products and services, and to get a "feel" for the organization. This "feel" promotes an image of the organization; it is a subjective quality that cannot easily be defined or documented. For example, if prospective students surf the Web to learn about colleges and universities and they can't find what they're looking for, their experience is not user-friendly. Their subjective view of the institution may be tainted not by the program offerings, not by the layout of the residence halls or the food in the cafeteria, but by the "feel" of the institution's Web site.

So often in institutional Web site design, much of the layout and formatting is out of the individual program's (or department's) control. Web sites are often organized within the institutional hierarchy of college, school, and/or department names. This institutional hierarchy may be obvious to those within the institution, but outsiders may not realize the layered effect. When prospective students are looking for college information online, one could assume that they would be looking for specific content areas with which they are familiar from their high school experiences. For example, they may expect to find a biology program listed as "biology" and business education programs listed as "business education." But this is not always the case.

Some business educators have long lamented the slow demise of our discipline and complained that our reputation for "secretarial skills" has chained us to the past. In an effort to bring new growth to business education, many programs have changed their names to become more "technologically savvy." But are we making ourselves more difficult to find – especially to prospective students who are looking for us on the Web?

Because the World Wide Web has become one of the most effective methods of distributing data, this study seeks to determine how business education is using the Web to provide information. What do business education department's Web pages look like? What kind of information do the pages provide? How easy is it to find the site from the institution's home page? The answers to these questions will determine how business education as a discipline is marketing itself online.

Purpose and Scope of the Study

The purpose of this study is to analyze the Web sites of collegiate business education programs across the nation and describe the image that business education presents online. The objective is not to determine an "appropriate" format for programs' Web pages, but to describe the ease of finding the programs' Web sites and the content presented on their pages. Data was originally gathered in 2001. The study was repeated in 2002 for comparison and will continue in the future as a longitudinal study.

The scope is very broad; the population includes the Web sites of all 104 institutions offering degrees or licensure in business education as listed in the October 2001 *Business Education Forum*. The 2001 pilot study used a random sample of 28 institutions (26 % of the population). The 2002 data collection included all of the business education programs (100 % of the population).

Research Questions

The following research questions are addressed:

1. Does the program have its own "Business Education" site or is it a part of another unit's Web site? In other words, is the business education program a unit/department in itself or is it part of a larger department?

2. Is the Web page (department, program, etc.) named "Business Education?"
   a. If not, what is it called?
   b. Is there a theme toward a "new" name?

   c. What percentage is called "Business Education?"

3. Of those business education programs that have their own sites, what similarities exist in terms of content?
   a. Do they list contact information (names, phone numbers, locations)?
   b. Are the faculty listed?
   c. Are the courses listed?
   d. Are there photos or images?
   e. Are student organizations included?

4. Is the layout and design of the site obviously professionally created or does it appear to be a student project. In other words, what image does it present?

Review of Literature

An initial search for related literature resulted in no sources associated specifically to business education's use of Web pages as marketing tools or the relationship of Web pages to the discipline's image. One study (Peck & Roxas, 2002) was found that addressed the home pages of accounting programs. Their findings indicated that several differences existed among the information provided on accounting programs' Web sites at AACSB-accredited institutions. Peck and Roxas (2002) suggested that program Web sites should be organized based on the reader's (prospective students) point of view rather than the hierarchy of the institution. Additionally, they stated that the "inconsistent format of faculty information was distracting, and we believed that it could lead the reader to conclude that some faculty members were far more competent than others" (Peck & Roxas, 2002, p. 212).

Although limited information is available about educational institutions' use of Web pages, extensive literature exists with regard to corporations' use of Web pages as public relations tools for both customers and the public. The data suggest that curious Web surfers will form opinions about corporations (and institutions) based on the design, layout, content, and construction of the Web sites (Fahrmann, Hartz, Wendling, & Yoder; 1997). As defined by Killoran (1999), Web sites are public relations departments. If a company's Web site is not easy to navigate, then the image of the company is compromised. In today's marketing industry, "image is everything." Therefore, a great deal of attention needs to be paid to the development, content, and up-keep of Web sites because the impact of a Web site is a "reflective mirror" of the institution's (and the program's) image.

Methodology

Subjects

The business education programs used as the population for this study were listed in the October 2000 (106 listings for the Year 1 data collection) and October 2001 (104 listings for the Year 2 data collection) editions of the *Business Education Forum*. Each institution offering a program in business education listed its university Web site, contact person, email address, and physical address. The institutions' Web sites were visited to find information about the business education programs.

In the Year 1 data collection (2001), business education information was not readily found at 36 (34 %) of the sites. For each of these 36 sites, the program contacts were emailed to ask where information about their programs could be found. Several emails were not returned; in addition, it was discovered that one of the programs was eliminated in 1999. Therefore, a total of 70 institutions were left in the study. Of those institutions, 28 (26 % of the total population) were randomly selected for the Year 1 data collection. In the Year 2 data collection, all 104 programs listed in the October 2001 *Business Education Forum* were investigated.

Data Collection Procedures

Using a simple database, the following demographic criteria were collected: state, institution, Web address, contact, email address. Specific variables were then identified for each site; these included the following:

- Individual Site (yes or no) – In other words, is the business education program listed on a Web page with other disciplines or does it have its own Web page(s)?

- Program Area (education, business, etc.) – Is the business education program's Web page part of the school/college/division of education or business or other area?

- Unit Name – What is the name of the department or unit that houses business education?

- Program Name – What is the name of the business education program?

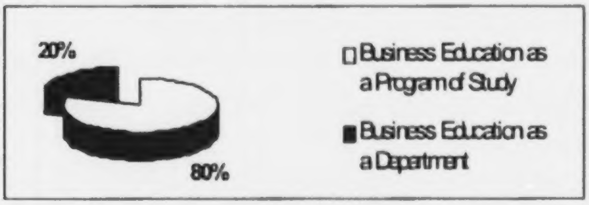
- Web Page Content – Yes or no responses were sought for each page: mission statement, accreditation, scholarship information, contact information, list of courses, current schedule, faculty, home page photos, job openings, alumni news, online/distance learning opportunities, student organizations (PBL, NBEA, DPE, etc.) graduate program, miscellaneous links, and last date the page was updated.

- Quality of Page – One of three levels of quality were assigned to each page: A = professionally desktop published (consistent theme at entire university site), B = template or editor used (professional quality, but visibly different from university theme), C = HTML or student created (questionable professionalism evidenced by excessive animation and color).

Findings

The first procedure conducted at each of the 104 institutions was to search for the term "business education." Surprisingly, 14% (n=15) of the institutions did not offer a search function on their home pages. Of the rest of the sites, 50 % (n=52) returned links that related to the business education program; 36% (n=37) returned pages that included the words "business" and "education" but were not related to "business education" programs. Of the entire population (n=104), 64 % (n=67) had individual Web sites for their business education programs. Interestingly, the majority (58%) of these programs were housed in colleges, schools, or divisions of business. Those business education programs that did not have their own Web sites (36 %, n=37) were either listed on Web sites with other programs (n=28) or were not listed (n=9) anywhere on the institutions' sites. Of those sites that were listed (n=95), 80% (n=76) indicated that business education was a program (major) offering within a department, school, college, or division; only 20% (n=19) were housed in their own departments of business education (see Figure 1).

Figure 1
Program v. Department



Unit Names

As Table 1 indicates, most (49.0 %) business education programs were housed in the school, college, or division of business; 33.7% were in education. At 9 of the 104 sites, business education could not be found anywhere at the institutions' sites. Additionally, at one site the name of the college or school could not be determined. Therefore, a total of 10 sites were labeled as unknown. Other unit names are listed in Table 1.

Table 1
Summary of College/School/Division Name (n=104)

Category	Total	(%)
Business	51	49.0%
Education	35	33.7%
Unknown	10	9.6%
Graduate	2	1.9%
Applied Science and Technology	2	1.9%
Arts and Sciences	1	1.0%
Technology	1	1.0%
Human Resource Development	1	1.0%
Hospitality, Retailing & Sports Management	1	1.0%

Additional data was collected on the specific department or unit name of the business education program. A total of 71 different names were collected, the majority (61.5%) of which fell into the category of "Other" in Table 2 below. These "Other" names *varied widely, for example:*

- Accounting and Information Systems
- Adult and Career Education
- Computer Information Systems and Office Administration
- Human Resource Development
- Middle/Secondary Education and Instructional Technologies
- Work, Community, and Family Education

Although "Business" was used most frequently as the first word in many of the names, it is important to note that only one of the departments was listed as just "Business Education." The rest included other titles such as:

- Business Education/Computer & Network Administration
- Business Education and Office Information Systems
- Business Education, Marketing Education, and Office Management
- Business Education/Computer Information Systems
- Business Information Management
- Business Information Systems & Education
- Business, Economics, & Management
- Business/Office Technology

Table 2
Summary of Department/Unit Name (n=104)

Category	Total	(%)
Other	64	61.5%
Unknown	9	8.7%
Business	9	8.7%
Business & Economics	6	5.8%
Secondary Education	5	4.8%
Curriculum & Instruction	4	3.8%
Business Information Systems	3	2.9%
Business Teacher Education	2	1.9%
Career & Technical Education	2	1.9%

The majority (n=72, 69 %) of program (major) names reflect the term "Business Education." Only those names that had multiple listings are provided in Table 3 below. The "Other" names typically began with the word "Business;" examples included Business and Information Systems, Business and Industry Education, and Information Systems Educator. Surprisingly, only one program name was called "Vocational Business Education."

Table 3
Summary of Program Name (n=104)

Category	Total	(%)
Business Education	72	69.2%
Unknown	10	9.6%
Other	9	8.7%
Business Teacher Education	5	4.8%
Business & Marketing Education	4	3.8%
Business Technology Education	4	3.8%

Content Variables

Once the program area was identified, the Web site was examined for several content variables. The list of variables was created during the Year 1 data collection and revised based on the Peek and Roxas (2002) study. The variables are reported in order of their frequency, but readers should not assume that each content variable is required to create effective business education Web pages. For example, if a program does not offer online classes, there is no reason to mention online education on the Web site. However, if Web sites are assessed from the prospective student's perspective, there are some standard variables that should be addressed. Contact information is crucial; if prospective students want more information, they need to know telephone numbers or email addresses. If they are planning to physically visit the campus, they will also need to know how to find the department.

Table 4
*Web Site Content Variables (n=95)**

Web Site Content	Total	(%)
Program Courses	73	76.8%
Contact Information	63	66.3%
Faculty Listed	59	62.1%
Student Organizations	34	35.8%
Graduate Program	42	44.2%
Date Page Last Updated	42	44.2%
Mission Statement	21	22.1%
Home Page Photos	17	17.9%
Miscellaneous Links	16	16.8%
Current Semester Schedule	13	13.7%
Online/Distance Learning	12	12.6%
Accreditation	12	12.6%
Scholarship Information	11	11.6%
Alumni News	6	6.3%
Job Openings	2	2.1%

* Note: Because business education programs could not be found at 9 of the 104 institutions Web sites, n=95.

Only two variables changed dramatically since the Year 1 data collection. In 2001, only 4 % of the business education Web sites noted their accreditation; this number more than doubled a year later. Conversely, the number of sites that listed job openings for business education graduates dropped from 16 % in 2001 to only 2.1 % in 2002. This decrease could be due to a localized reduction in the number of open positions. The decline could also represent the programs' Web masters' desires not to have to update the positions as they become open and then filled.

The top three variables remained consistently high for both Year 1 and Year 2. Most Web pages included a list of required courses whether they were formatted by semester or linked to the institutions' course catalogs. Contact information was also included on the majority (63 %) of the sites; however, it was alarming that a full third of the sites did not include telephone numbers or physical mailing addresses on the business education pages. Lists of faculty, often with links to course pages or curriculum vita, were also predominant.

The number of Web sites that included information about student organizations remained constant at 36 %. The clubs varied, of course, and included Phi Beta Lambda/Future Business Leaders of America (18 %), Pi Omega Pi (14 %), Delta Pi Epsilon (14 %), Business Professionals of America (3 %), and DECA (3%). Only 11 % of the sites included links to the National Business Education Association; however, some of the faculty pages included related links.

Professional Image

The layout and design of a Web page sets the theme and tone for the Web site. First impressions are drawn not only on the content of the page, but on its appearance as well. Comparison scores of A, B, or C were assigned as specified in the data collection procedures. The majority of sites (62 %) were in the B category: the sites used a template or editor to create a professional-looking Web site; however, the site was visibly different in its layout and design from the rest of its university pages. Twenty-four percent had professionally desktop published pages that were consistent with the rest of the institution's Web pages. These A category sites were also easy to navigate and were well organized for someone who was not familiar with the institution. Only 14 % (category C) had animated or excessive graphics and a wide assortment of colors or fonts or a confusing layout.

Conclusions and Recommendations

The purpose of this research was not to develop a list of criteria suggested for all business education Web sites, but to provide a description of the current image of business education online. The findings represent a wide variety of content, yet it is important to tailor each program to its clientele. There are some content variables, however, that should be fairly consistent among all business education Web sites.

Given the worldwide nature of the Web, its potential audience, and the need to strengthen our discipline's image, it is imperative that business education presents a positive presence online. Business education professionals often lament the demise of our discipline, but what are we doing to promote ourselves? How can we better reach our audiences, advertise our value, and enhance our worth if we do not have a strong presence on the Web? Pages with dead links, outdated information, and unprofessional designs do not promote a professional image for our discipline. Therefore, the following recommendations are made:

1. Be searchable: Go to your institution's home page and search for business education (or whatever term you use to market your major). If your program or department link is not provided on the first page of the list of related sites, contact your Web "gurus" to make your name a priority.
2. Practice what we preach: Use the desktop publishing and Web design protocols addressed in many software application texts and business education courses.
3. Allocate resources: If a faculty member is assigned the duty of Web master, he/she should be given the necessary resources (time, hardware, software, training, etc.) to maintain the site and ensure data is up to date and all links are accurate. If course load reductions are not an option, perhaps reduced advising or committee assignments would help.
4. Include student-oriented data: Organize the Web page content for students (especially prospective students), and not primarily NCATE reviewers. Focus on course requirements, program requirements (such as Praxis), student organizations, internships, scholarships, and other events in which you want your students to be active and informed.
5. Be consistent: Consider developing a template for faculty pages so some sites do not overshadow others. As Peck and Roxas (2002) commented, "We concluded that an inconsistent format for listing faculty activities and achievements conveyed the impression that some faculty members appeared to be less competent than others" (p. 209).

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Factors Related to Business Education Teachers Integration of Technology Into the Teaching-Learning Process

Donna H. Redmann
Joe W. Kotrlik
Bruce Douglas
Louisiana State University

Abstract

This study addressed the factors that explain the level of integration of technology into the teaching-learning process in secondary business education programs. Variables such as perceived teaching effectiveness, perceived barriers to integrating technology, students having e-mail accounts, and the availability of selected technology explain a moderate proportion of the variance in teachers' integration of technology in instruction. Business teachers have adopted technology in their instruction, but have not integrated technology at the highest level.

Theoretical Framework/Literature Review

Impact of Technology on the Teaching-Learning Process

Our society has experienced tremendous changes due to technological advances; many of the old ways of doing things may be effective but not efficient. Learners need to acquire lifelong-learning skills and the ability to cope with constantly changing workplaces. "Today's students need not only to know how to learn, but how to analyze and summarize data, make decisions, work in teams, plan solutions to complex problems and be capable of adapting to the unexpected" (Dwyer, 1999, p. 300). Dwyer noted that the traditional learning paradigm is still being used in which teachers lecture while students listen, take notes, and demonstrate mastery on objective exams. This paradigm does not provide learners with the necessary knowledge, skills, and attitudes (KSAs) for the modern work world. Dwyer stated that technology based learning environments can help students acquire the type of KSAs needed for success.

"Technology is changing more rapidly than ever before, causing more and more confusion about the best way to use it in schools" (Bailey, 1997, p. 57). "If the integration of technology in the classroom in the next ten years is to look any different from the last ten, we must focus time, money, and resources in the areas that can have the greatest impact for our students, our teachers." (Fabry & Higgs, 1997, p. 393). Several of the top rated topics identified by Rader and Wilhelm (2001) in their recent publication, *Needed Research in Business Education*, are directly related to technology integration in the teaching/learning process.

According to the Office of Technology Assessment's 1995 report on teachers and technology, schools have made significant progress in implementing technology in helping teachers to use basic technology tools, but they still struggle with integrating technology into the curriculum. This is supported by McPherson and Olivo (1998) who studied the status of Internet usage among secondary business educators in Pennsylvania. The authors concluded that a majority of the teachers used the Internet primarily for e-mail, but did not regularly use the Internet at home or at school. They indicated that the lack of Internet connections and training may explain why they were not using the Internet for instructional purposes.

However, Lu and Molstad (1999) stated the integration of technology has been expanded at all educational levels. In South Dakota high school classrooms, they found that computer technology was being used to teach skills in computer oriented courses and used as an instructional tool in non-computer-oriented business courses. Ristau, Crank, and Rogers (2000) found that the Internet was being used as a teaching and learning tool by more than half of the business teachers in Wisconsin secondary schools. In a 2001 national study of secondary and post-secondary business education teachers' use of Internet technologies, Alexander found that a majority of the teachers had access to the Internet and used it for administrative purposes as well as a teaching-learning tool.

The National Center for Education Statistics (2000) studied the integration of various technologies in the teaching/learning process. They reported the following examples of how teachers had integrated technology: 44% reported using technology for classroom instruction, 42% reported using computer applications, 12% reported using practice drills, 41% reported requiring research using the Internet, 20% required students to use technology to solve problems and analyze data, 27% had students conduct research using CD-ROMs, 27% assigned students to produce multimedia reports/projects, 23% assigned graphical presentations of materials, 21% assigned demonstrations/simulations, and 7% assigned students to correspond with others over the Internet. The Office of Technology Assessment (1995) concluded in their report that "Curriculum integration is central if technology is to become a truly effective educational resource, yet integration is a difficult, time consuming, and resource-intensive endeavor" (p. 1).

Barriers to Technology Integration

George (2000) indicated that the primary barrier in incorporating technology in the teaching/learning process is the lack of expertise, time, and funds. In several meta-analyses conducted by Fabry and Higgs (1997), it was found that the major barriers in the implementation and integration of technology in the teaching/learning process are: resistance to change, teachers' attitudes, training, time, access, and cost. This is supported by a National Center for Education Statistics study in which it was found that the barriers to the use of the Internet and computers for instruction included lack of computers, lack of release time for teachers to learn how to use this technology, and lack of time in the school schedule for student computer use (Smerdon, et al., 2000). The organizational structure of schools may inhibit teachers' efforts to learn about new technologies and resists innovation (Glenn, 1997). In a 1978 Rand Corporation Study, Berman & McLaughlin found that innovations tend to fail when they are implemented without considering the complex social nature of schools. It is not enough to simply make teachers better or more efficient–they must like new technology better than what they already have. According to Kerr (1989), " . . . the teacher's world is substantially limited by powerful social and administrative pressures to teach in a particular way" (p. 5).

Schools have their priorities reversed (Budin, 1999). It appears that school systems have been more concerned with acquiring equipment and software rather than emphasizing staff development and planning for the integration of technology. Curriculum, teacher training, and research have received minimal attention. The use of technology needs to be evaluated, especially in the areas of how technology fits into the curriculum, what teachers should know, how teachers will learn about technology, and how the impact of technology should be assessed (Budin, 1999).

Another area that may be related to technology barriers is technology anxiety. No research could be found that addressed teachers' anxiety relative to the broad area of implementing technology, other than just computers, in the teaching/learning process. Most of the research on technology related anxiety has been conducted in the areas of computer anxiety and using computers as program or instructional management tools (word processors, grade books, databases, presentations, etc.) for teacher use. Budin (1999) stated that the placement of technology into classrooms without teacher preparation and curriculum considerations has produced high levels of anxiety among teachers. "Understanding the stages of learning to use the technology empowers the learner through the knowledge that the feelings of tension and frustration will be overcome" (p. 173). Teachers understanding of these stages will assist them in reducing their anxiety level and passing through the stages more rapidly. Technology and psychological support are important because early successful encounters with technology will create enthusiasm and build teachers' confidence. These observations were supported by Hardy (1998).

Fleming (1992) studied teachers' view of technology and reported that they have a "restricted view of technology" (p. 151). Most view technology as applied science or as artifacts, a view that is derived from the mass media. Zisow (2000) stated that "Technology is merely a tool. . . . The key in adapting new technologies lies in teacher style, not technology" (p. 36). Zisow also claimed that whether technology was integrated into the teaching/learning process was dependent on the teaching style of the teacher.

Teaching Effectiveness and Technology Integration

Several authors have cited ways technology can improve instructional effectiveness. "Technology simply increases the options available to the instructor for delivering instruction to the learner" (Kizzier, 1995, p. 12). Lu and Molstad (1999) provided the following examples:

- Sales (1993): Multimedia packages allow teachers to interact with large groups, lead discussions, individualize instruction, and guide students to discover key details in the presentation.
- Harasim, 1993: Telecommunication tools allow teachers to communicate with students and other teachers, encouraging articulation of ideas and collaboration.
- Norton, 1993: Technology enhances students' problem-solving ability.
- Becker, 1988; Bialo & Sivin, 1990; Cosden, 1988; Oblinger, 1992; Rupe, 1986: Technology motivates students to learn.

Lu and Molstad (1999) concluded that business teachers perceive that technology is an effective instructional tool in certain areas, namely, enhancing instructional quality, increasing student interest in learning, and matching student abilities to learning tasks.

However, Bosch (1993) reported that teachers did not see computers as part of the normal classroom process and often used them for ancillary activities. He recommended that administrators look beyond the number of computers in schools and determine whether real integration across the curriculum had occurred. Byron (1995) listed several shortcomings related to teacher effectiveness when using technology in instruction. These shortcomings included the lack of faculty training on the use in instructional technology, classrooms that were not designed to support the use of technology, teachers' doubts about whether technology would improve their performance, and teachers' concerns about whether technology enhances or detracts from teaching and learning. Golden also reported that teachers don't use the latest technology because of a lack of training or because they are not comfortable with the technology (1997).

Business education teachers use a variety of sources for their technology training. Redmann, Kotrlik, Harrison, and Handley (1998) found that the training sources used most often by business education teachers were self-directed learning and written materials. Other sources included university courses, professional conferences, teacher in-service training, workshops sponsored by business or industry, and vendors. When comparing secondary and post-secondary business educators, Alexander (2001) found that secondary business educators are more likely to be trained in the use of the Internet through in-house instruction and off-site instruction than post-secondary business educators. Smerdon et al. (2000) reported that teachers list ". . . independent learning most frequently as preparing them for technology use (93 percent), followed by professional development activities (88%) and their colleagues (87 percent)" (p. iii). Teachers with less experience generally reported college studies as the source of their expertise in the use of technology. In a study of business education teachers in five Midwestern states, McEwen (1996) reported that teachers used a variety of sources for acquiring software skills. Teaching themselves was reported by 91%, primarily aided by software manuals and textbooks. Other sources included college courses, workshops, and to a lesser-extent, school-sponsored and vendor training. Teachers who use technology in their classrooms seem to change their instructional methods and attitudes (Jordan & Follman, 1993).

Need for the Study

Numerous articles have been written on the value of using technology in instruction. However, no business education studies have addressed the integration of technology in the teaching-learning process beyond assessing teachers' computer skills, their opinions of computer use, and basic applications of computers in instruction. This study was designed to assess the degree of integration of technology into the teaching-learning process in Louisiana's secondary business education programs.

Conceptual Base for the Study

This study was based on the four levels of the Kotrlik and Redmann Technology Integration Model (©2002), which was developed based on the literature cited above and many other foundational studies:

1. **Exploration - Thinking About Using Technology.** Teachers seek to learn about technology and how to use it.

2. **Experimentation - Beginning to Use Technology.** Physical changes start to occur in classrooms and laboratories. Instructors focus more on using technology in instruction by presenting information using presentation software and doing a few instructional exercises using spreadsheets, databases, word processors, games, simulations, the Internet, and/or other computer tools.

3. **Adoption - Using Technology Regularly.** Physical changes are very evident in the classroom and/or laboratory with the computers becoming a focal point in the classroom and/or laboratory organization. Instructors employ presentation software and technology based instructional exercises using games, simulations, spreadsheets, databases, word processors, the Internet or other technology tools as a regular and normal feature of instructional activities. Students shared responsibility for learning emerges as a major instructional theme.

4. **Advanced Integration - Using Technology Innovatively.** Instructors pursue innovative ways to use technology to improve learning. Students take on new challenges beyond traditional assignments and activities. Learners use technology to collaborate with others from various disciplines to gather and analyze information for student learning projects. The integration of technology into the teaching/learning process has lead to a higher level of learning.

Purpose

The purpose of this study was to determine what factors explain the degree of integration of technology into the teaching-learning process in Louisiana's secondary business education programs. The objectives were to determine:

1. the extent to which technology has been integrated into the teaching-learning process;

2. reasons why technology has/has not been implemented in the teaching-learning process (barriers);

3. business teachers perceptions of their teaching performance and/or effectiveness;

4. technology anxiety of business teachers; and

5. if selected variables explained a significant proportion of the variance in technology integration.

For this study, instructional technology has been defined as "employing the Internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means to support, enhance, inspire and create learning."

Research Methods and Procedures

Population and Sample

The target and accessible population for this study was all secondary business education teachers in Louisiana ($N = 930$). A completely random sample of 289 was drawn. This sample size was based on the minimum returned sample size of 144 that was determined using Cochran's (1977) sample size formula based on an alpha level of .05, a standard error estimate of .03, and the primary variables reported on a five point scale.

Instrumentation

The scales and items used in the instrument were developed by the researchers after a review of the literature guided by the theoretical base. A demographics section was included to provide a description of the sample. The face and content validity of the instrument was evaluated by an expert panel of university faculty and doctoral level graduate students. The instrument was pilot tested with 29 teachers. Changes indicated by the validation panel and pilot test were made. These changes occurred in the wording of items and in the instructions for completing the instrument. The standards for instrument reliability for Cronbach's alpha by Robinson, Shaver, and Wrightsman (1991) were used to judge the quality of the scales in the instrument: .80 - 1.00 - exemplary reliability, .70 - .79-extensive reliability, .60 - .69 - moderate reliability, and <.60 - minimal reliability. Using these standards, all scales except the Exploration subscale possessed exemplary reliability. The Exploration subscale possessed extensive reliability. Internal consistency coefficients for the scales in the instrument were as follows (Cronbach's *alpha*): Technology Integration scale - .92, Exploration subscale - .76, Experimentation subscale - .96, Adoption subscale - .93, Advanced Technology Integration subscale - .81, Barriers to Technology Integration scale - .87, and Teaching Effectiveness scale - .91.

Data Collection

The responses were collected using two mailings and a systematic follow-up of a random sample of non-respondents. Each mailing consisted of a questionnaire, cover letter, and stamped, addressed return envelope. The systematic follow-up of non-respondents consisted of telephone calls to the sample of non-respondents in which the teachers were requested to complete and return the instrument if they had the mailed copy, or to complete and return a copy of the instrument that was mailed or faxed to them if they agreed to respond. A response rate of 50.9% (140 out of 289) was attained after the completion of the two mailings and the telephone follow-up.

Data Analysis

Inferential t-tests were used to compare the grand means on the technology integration, barriers to technology integration, and perceived teaching effectiveness scales by response wave (whether the teachers responded after the mailed or telephone contacts). No significant differences existed, therefore, it was concluded that the data were representative of the population and the responses secured by the telephone follow-up were combined with those received by mail for further analyses. The data were analyzed using descriptive statistics for objectives 1-4. Stepwise multiple regression was used for objective 5. The alpha level was set á priori at .05. Cohen's (1988) standards for interpreting effect sizes for multiple regression analyses were used to interpret the results: $R^2 > .0196$ - small effect size, $R^2 > .13$ - moderate effect size, and $R^2 > .26$ - large effect size.

Findings

Ninety-five percent of the teachers had a home computer, with 87% having Internet access. When asked about sources of technology training, 88% had attended workshops or conferences, 86% reported they were self-taught, 64% had taken college courses, 52% listed their colleagues, and 7% listed other sources of technology training. Over two-thirds (81%) reported they had an e-mail account, 27% had Interactive CD equipment, 18% reported they had laser disc players or standalone CD players, 13% reported their students had e-mail accounts, and 28% reported they had other technology available. Over half (55%) reported they had an office at school, 52% had an office computer with Internet connection.

Objective 1

To determine the extent to which technology had been integrated into the teaching/learning process in business education programs, teachers completed the Kotrlik and Redmann Technology Integration Scale (©2002). The teachers responded to the 34 items using the following scale: 1= "Not like me at all," 2= "Very little like me," 3= "Some like me," 4= "Very much like me," and 5= "Just like me." The mean ratings for each of the subscales of the instrument were: Exploration (5 items) - M=3.84 (SD=.85), Experimentation (9 items) - M=1.91 (SD=1.18), Adoption (15 items) - M=4.09 (SD=.74), and Advanced Integration (4 items) - M=2.63 (SD=1.08). These data indicate that business teachers have reached the adoption level of the technology integration model. Examples of the items from the four subscales in the instrument are presented in Table 1.

Table 1
Examples of Items in the Four Subscales in the Kotrlik and Redmann Technology Integration Scale (©2002)

Statements		*M*	*SD*
Subscale: Exploration (5 statements in subscale)	**Grand Mean:**	**3.84**	**.85**
2. I want to take a course to learn how to use technology in the teaching/learning process. 3. I talk with my principal or fellow teachers about using technology in my instruction.			
Subscale: Experimentation (9 statements in subscale)	**Grand Mean:**	**1.91**	**1.18**
9. I am just beginning to use instructional exercises that require students to use the Internet or other computer programs. 11. I am just beginning to experiment with ways to use technology in the classroom.			
Subscale: Adoption (15 statements in subscale)	**Grand Mean:**	**4.09**	**.74**
17. I emphasize the use of technology as a learning tool in my classroom or laboratory. 18. I assign students to use the computer to do content related activities on a regular basis.			
Subscale: Advanced Integration (4 statements in subscale)	**Grand Mean:**	**2.63**	**1.08**
26. I encourage students to design their own technology-based learning activities. 29. I expect students to use technology to such an extent that they develop projects that are of a higher quality level than would be possible without them using technology.			

Note. *N* for the four sub scales was 145. Scale: 1 = Not Like Me at All, 2 = Very Little Like Me, 3 = Some Like Me, 4 = Very Much Like Me, and 5 = Just Like Me. The Kotrlik and Redmann Technology Integration Scale (TIS) (©2002) is based on the Kotrlik and Redmann Technology Integration Model (©2002).

Objective 2

The respondents were asked to rate the magnitude of the barriers that may prevent them from integrating technology into the teaching/learning process. The teachers responded using the following scale: 1= "Not a barrier," 2= "Minor barrier," 3= "Moderate barrier," and 4= "Major barrier." This scale consisted of 11 items. The mean magnitude of the barriers reported by the teachers was 1.88 (*SD*=.64), which indicated that the teachers were encountering minor barriers as they attempted to integrate technology into the teaching/learning process. The statements in the barriers to technology integration scale are presented in Table 2.

Table 2
Statements Included in the Scale Measuring Barriers That May Prevent Business Education Teachers from Integrating Technology into the Teaching/Learning Process

Statements
· Enough time to develop lessons that use technology.
· Scheduling enough time for students to use the Internet, computers, or other technology in the teaching/learning process.
· Availability of technology for the number of students in my class.
· Availability of technical support to effectively use instructional technology in the teaching/learning process.
· Administrative support for integration of technology in the teaching/learning process.
· My ability to integrate technology in the teaching/learning process.
· My students' ability to use technology in the teaching/learning process.
· Type of courses I teach.
· Reliability of the Internet at my school.
· Access to the Internet at my school.
· Availability of effective instructional software for the courses I teach.

Note. *N*=146. Scale Grand Mean=1.88 (*SD*=.64). Scale: 1=Not a Barrier, 2=Minor Barrier, 3=Moderate Barrier, and 4=Major Barrier.

Objective 3

Teachers reported their perceptions of their own teaching effectiveness regardless of whether they used technology. The teachers responded using a seven item, five point Likert scale that ranged from 1= "Strongly disagree" to 5= "Strongly agree." The teachers' mean perceived teaching effectiveness was 3.96 (*SD*=.61), which indicated that they agreed with the statements in this scale. Only 22% rated themselves at the very highest level, and 75% rated themselves as strong teachers. The statements in the scale are presented in Table 3.

Table 3
Statements in the Teachers' Perceptions of Their Own Teaching Effectiveness Scale

Statements
· I am among the very best teachers.
· I am highly effective in teaching the content in my courses.
· My students would rate me as one of the very best teachers they have ever had.
· The other teachers in my school would say that I am one of the best teachers at this school.
· All of my students would evaluate my courses as excellent.
· I am a role model for other teachers.
· My principal or director would say that I am one of the best teachers at this school.

Note. N=146. Scale Grand Mean=3.96 (*SD*= .61). Scale: 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, and 5=Strongly Agree.

Objective 4

Teachers were asked to report the level of anxiety they experienced when thinking about using technology in their instruction on a four point scale that ranged from no anxiety to high anxiety. A mean anxiety level of 1.50 (*SD*=.*64)* indicated that teachers are experiencing some anxiety, with only 6% reporting moderate or high anxiety.

Objective 5

A stepwise regression analysis was conducted to determine if selected variables explained a significant proportion of the variance in the mean scores for the advanced technology integration scale. The dependent variable in this analysis was the grand mean of the advanced technology integration subscale. Four independent variables explained significant proportions of the variance in advanced technology integration (total R^2=.25): the grand mean of the teaching effectiveness scale which measured the teachers' self-reported teaching effectiveness (R^2=.11), the grand mean of the barriers scale which measured the magnitude of the barriers that may prevent them from integrating technology into the teaching/learning process (additional R^2=.07), whether their students had e-mail accounts (additional R^2=.05), and whether the teachers had laser disc or standalone CD players (additional R^2=.02). According to Cohen (1988), this is a medium effect size. The ANOVA table for the regression analysis is presented in Table 4 and the model summary is presented in Table 5. In addition, information regarding the variables that were not included in the regression model are presented in Table 6. The data in Table 6 show that several factors did not explain significant variance in technology integration. Of special interest is the fact that none of the sources of training made substantial contributions to the teachers integrating technology in their instruction, even though the teachers reported using these sources for their training, as reported above.

Table 4
ANOVA Table for the Stepwise Multiple Regression Analysis of the Advanced Technology Integration Scale Scores.

Source	***SS***	***Df***	***MS***	***F***	***P***
Regression	41.07	4	10.27	11.26	.000
Residual	122.25	134	.91		
Total	163.33	138			

Note. Likert scale on which grand mean was based: 1 = Not Like Me at All, 2 = Very Little Like Me, 3 = Some Like Me, 4 = Very Much Like Me, and 5 = Just Like Me.

Table 5
Model Summary: Multiple Regression Analysis of Teacher Responses to the Advanced Technology Integration Scale

				Change Statistics				
Model	***R²***	**Adjusted *R²***	***SE***	***R²* Change**	***F* Change**	***df1***	***df2***	***P***
1[a]	.11	.10	1.03	.11	16.44	1	137	.000
2[b]	.18	.16	1.00	.07	11.11	1	136	.001
3[c]	.23	.21	.97	.05	9.27	1	135	.003
4[d]	.25	.23	.96	.02	4.28	1	134	.041

[a]Predictors: Teacher effectiveness. [b]Predictors: Teacher effectiveness, barriers to technology integraton. [c]Predictors: Teacher effectiveness, barriers to technology integration, whether students had e-mail. [d]Predictors: Teacher effectiveness, barriers to technology integration, whether students had e-mail, whether teacher had laser disc or standalone CD players.

Table 6

Variables Excluded From the Multiple Regression Model for the Advanced Technology Integration Scale

Variable	*B* In	*T*	*P*	Partial Correlation	Collinearity Statistics/ Tolerance
Source of technology training: colleagues	-.13	-1.77	.08	-.15	.99
Source of technology training: workshops/ conferences	.13	1.75	.08	.15	.98
Source of technology training: college courses	.10	1.32	.19	.11	.94
Technology anxiety	-.10	-1.26	.21	-.11	.86
Source of technology training: self-taught	-.06	-.82	.42	-.07	.99
Internet connection at school office	.06	.73	.47	.06	.97
Internet connection at home	.05	.71	.48	.06	.99
Interactive CDs available for instructional use	-.04	-.57	.57	-.05	.93
Whether teacher had e-mail account	.00	.01	.99	.00	.92

Conclusions

Based on the responses to the technology integration scale, most business teachers have reached the adoption stage in their level of technology integration with some achieving the highest technology integration level. Some teachers have not had access to the latest technology for use in their classrooms and labs; however, it appears business teachers have done a good job of using the available technology to promote learning. This conclusion is supported by Lu and Molstad (1999), Ristau, et al., (2000), and Alexander (2001). Even though business education teachers have computers, they are not using the Internet, e-mail and others forms of technology as much as they are using computers, often because they do not have access to this technology for student use in learning. This is supported by McPherson and Olivo (1998) who found that business teachers used the Internet primarily for e-mail, and they did not regularly use the Internet at home or at school.

Overall, teachers are experiencing minor barriers in their efforts to integrate technology in the teaching/learning process, even though they have experienced varying degrees of problems with technology integration barriers. Technology anxiety does not appear to be a barrier for business education teachers; however, the teachers are experiencing some anxiety when they think about using technology in their instruction. These conclusions are partially supported by the literature presented in the theoretical base.

Business teachers perceive they are good teachers regardless of whether they have integrated technology in the teaching/learning process, with a small proportion believing they are excellent teachers and many perceiving they are strong teachers. As supported by the literature, the teachers use a variety of training sources for the integration of technology in the teaching-learning process, with the primary sources being workshops/conferences, self-taught, college courses, and colleagues. When the extent to which teachers have integrated technology in the teaching/learning process is examined, four variables explain the variance in technology integration by business education teachers, namely, their perceived teaching effectiveness, barriers that prevent technology integration, whether students had e-mail, and whether the teacher had laser disc or standalone CD players available.

Implications for Practice

Holmquist stated, "Business educators must continue to anticipate changes and prepare for those changes" (1992, p. 4). Technology can be used as the basis of an instructional environment that enriches the teaching/learning experience for both teachers and students. Technology has changed the nature and content of courses and has allowed faculty to complete menial tasks in a more efficient manner. The instructional use of technology has changed from the occasional use of computer labs to conduct small computer based projects to including multiple computers in classrooms so that technology can be integrated into the teaching/learning process. Business education teachers have demonstrated a fairly strong movement from the low end to the higher end of this continuum of technology integration, however, they must continue to pursue the highest level of technology integration. Business teachers are using workshops and conferences, and self-directed learning to develop their technology integration skills. They must continue to aggressively utilize these training sources to stay on the cutting edge of technology integration. Universities, school systems, and state departments of education may need to evaluate the technology integration training they have conducted to determine why it has not substantially contributed to business teachers' integration of technology in the teaching-learning process. Future research should be conducted to identify factors that can assist teachers in the integration of technology in the teaching-learning process.

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Fields of Employment Longevity:
A Study of Business Graduates

Nancy Buddy Penner
Victoria Falconer
Harry Nowka
Southwestern Oklahoma State University

Abstract

This study compared employment of college business graduates by major in fields of employment during four time periods. A determination was made of the initial employment field. The study also determined the employment field in which the graduate was working at the time of the survey. An intended outcome of 75 percent of employment in the major field revealed that business education initially met the requirement but did not achieve the outcome during the remaining time periods. Accounting met the requirement during one of the time periods. Business administration, finance, and management did not meet the minimum outcome assessment criteria.

Introduction

Employment mobility is one of the most dominant features of the university business graduate labor market. Workers with large investments in human capital tend to stay with occupations longer than those with little investment in human capital. Americans are inclined to change occupations several times during their careers. This study was concerned with the degree of stability of employees with business majors in specific occupations.

Review of Literature

According to Maguire (1993), median occupational tenure is approximately 6.5 years and declining. In the Maguire study, it was found that younger workers tend to have more mobility to change occupations than older workers. The study also indicated that occupational tenure was lowest in rapidly growing industries but tended to be higher in industries experiencing low economic growth. The study implied that occupational tenure tended to be longer for self-employed entrepreneurs compared to all other workers. High pay was a basis for long occupational tenures according to the study. Investment in human capital, particularly those with large investments in the educational process, led to employment that offered stability compared to workers with small investments, according to the study.

Hall (1982) found that some workers held jobs for 20 years or more. This study revealed that near-lifetime employment was an important factor in the labor market. The study further pointed out that most workers hold very stable jobs even though these stable jobs are only a small portion of the jobs that are filled. The study specified that only approximately 1/3 of older workers were in jobs that had lasted most of their careers.

Ureta (1992) revisited the Hall study and developed a model to mathematically estimate probabilities for future studies of job tenure. This study had some additional determinates from the Hall study, particularly the question of working "continuously" for a present employer. The study's conclusions supported the Hall study concerning lifetime employment probabilities. This study did determine a greater trend toward discrimination of black males versus white males for lifetime employment. Additionally, the study found that, in lifetime employment opportunities, blacks versus whites were at a greater disadvantage than women were relative to men. Light and Ureta (1992) found evidence of increasing job retention probabilities for younger cohorts of women. Abowd and Card (1987) reported that productivity variation affects earnings at least as much as hours, regardless of job longevity.

Finnie (2001) reported on career outcomes of Bachelor-level graduates by discipline. The studies were conducted two and five years after graduation and focused on groups of graduates from 1982-1995. Results showed that direct career preparedness, particularly for professional employees, led to higher job satisfaction and longevity in employment.

Purpose

The purpose of this study was to compare employment terms of college business graduates by major in fields of employment. The study was designed to determine whether graduates attained initial employment in the field the graduate majored. Second, the study was to determine the employment field in which the graduate was working at the time of the survey.

Limitation of Study

The respondents attended a regional university in the southwest United States. The respondents self-reported their perceived field of employment.

Population and Respondents

A list of 711 business graduate addresses was obtained from the university foundation and alumni association. After eliminating two duplicates and determining 132 incorrect addresses, 577 business graduates received the initial questionnaire. One follow-up letter and questionnaire was sent. The total number of respondents from this group was 234 (40.6 percent).

An additional 1802 possible business graduates' names were identified from an alumni directory developed for the university by an outside consulting firm. Nine individuals were eliminated from this list because they reported not being business graduates. Undeliverable questionnaires indicated 563 incorrect addresses. Of the remaining 1230 graduates, 314 (25.5 percent) returned questionnaires after two mailings consisting of a cover letter and questionnaire. A total of 548 (30.3 percent) usable questionnaires were returned.

Methodology

A questionnaire was developed that included a series of questions seeking selected employment data. In addition, each respondent was asked to provide the job title of initial employment and current employment. The initial questionnaire was subjected to a pilot test of 22 school-of-business alumni. Revisions were made on the basis of the comments received from this pilot group.

Data Analysis

The majors of college business graduates were arranged into four time periods. Fields of employment were divided into initial and current employment at the time of the survey. A comparative analysis was made for the variables of major, employment, employment field, and year of graduation. From the data provided by each respondent, eleven fields of employment and nine business majors were identified for analysis. Demographic data were collected for each respondent, however that data was not reported in this phase of the study.

Analysis Procedures

Each major's respondents were analyzed based upon an outcomes assessment objective of an intended outcome of the following: 75 percent of graduates will accept initial employment in their major. Throughout the years, majors have expanded from initial majors in accounting, business education, economics, and general business. Currently, all business students receive a BBA with majors in accounting, business information systems, finance, general business, management, and marketing. Expectations in the outcomes assessment objectives include the attainment of managerial responsibilities during the respondent's tenure of employment. Analysis is limited to responses in which five or more respondents indicated fields of employment. Two observations from the demographic data were that respondents were similar to national norms in that male respondents were tending to retire before the age of 65 and female respondents had increased their labor force participation rates.

Respondents Who Graduated Before 1970

Accounting: Initially, graduates worked in the fields of accounting and management. Accounting graduates did not meet the initial employment outcome criteria. Presently, the graduates are working in significant percentages in the field of management. Business Administration (general business): Initially, graduates worked in the fields of management and insurance. Presently, business administration graduates are working in the fields of management, small business, and other areas. Business Education: Initially, all responding graduates worked in the field of business education and met the outcome objective. Presently, only 38.5 percent are working in the field of education. Economics: Initially, graduates worked in a wide variety of fields. More than 50 percent of the economics respondents continued in a graduate program during this time period. Presently, graduates are also working in a variety of fields. Other majors did not have sufficient respondents.

Data for respondents who graduated before 1970 are indicated in Table A. The data indicated that business administration (general business) had the greatest number of respondents, followed by business education, accounting, and economics. This corresponds to the actual number of graduates for the period surveyed. The number of respondents who graduated before 1970 who did not respond to the question of initial and present employment was eight percent. Percentages in tables A-D are rounded and may not always add to 100 percent.

Respondents Who Graduated Between 1970 and 1979

Accounting: Initially, graduates worked in the fields of accounting (55.6 percent) and management. Presently, graduates are working in the fields of accounting (33.3 percent) and management (31.1 percent). Business Administration: Initially, graduates worked in the field of management (32.4 percent). Presently, graduates are working in the field of management (35.1 percent). Business Education: Initially, graduates worked in the field of business education (62.5 percent). Presently, only 43.5 percent are working in the field of business education. Management: Initially, graduates worked in the field of management (60 percent). Presently, graduates are working in the field of management (50 percent). Office Administration: Initially, graduates worked in the field of administrative systems (60 percent). Other majors did not have sufficient respondents.

Data for respondents who graduated between 1970 and 1979 are indicated in Table B. The data indicated that accounting had the greatest number of respondents, followed by business administration and business education. This also corresponds to the actual number of graduates for the period surveyed. The number of respondents who graduated between 1970 and 1979 who did not respond to the question of initial and present employment was 8.5 percent.

Respondents Who Graduated Between 1980 and 1989

Accounting: Initially, graduates worked in the field of accounting (82.2 percent). This percentage met the intended outcome objective. Presently, graduates are working in the fields of accounting (59 percent) and management. Business Administration: Initially, graduates worked in the fields of management and administrative systems. Presently, graduates are working in the field of management (36.9 percent). Business Education: Initially, graduates worked in the fields of administrative systems and business education (48.4 percent). Presently, graduates are working in the field of business education (61.3 percent). Finance: Initially, graduates worked in a wide variety of fields. Presently, graduates are working in the fields of accounting (21.4 percent), banking (35.7 percent), and finance (21.4 percent). Management: Initially, graduates worked in the field of management (27.3 percent). Presently, graduates are working in the field of marketing (31.8 percent). Marketing: Initially, graduates worked in the field of management (63.6 percent). Presently, graduates are working in the fields of marketing (27.3 percent) and education (27.3 percent). Other majors did not have sufficient respondents.

Data for respondents who graduated between 1980 and 1989 are indicated in Table C. The data indicated that business administration had the greatest number of respondents, followed by accounting, business education, and management. This corresponds to the actual number of graduates for the period surveyed. The number of respondents who graduated between 1980 and 1989 who did not respond to the question of initial and present employment was 2.9 percent.

Respondents Who Graduated Between 1990 and 1993

Accounting: Initially, graduates worked in the field of accounting (61.8 percent). This percentage did not meet the intended outcome objective. Presently, graduates are working in the field of accounting (54.5 percent). Business Administration: Initially, graduates worked in the fields of management (44.4 percent) and administrative systems. Presently, graduates are working in the field of management (44.4 percent). Business Education: Initially, graduates worked in the fields of administrative systems (23.5 percent), marketing (23.5 percent) and business education (35.3 percent). Presently, graduates are working in the field of business education (47.1 percent). Finance: Initially, graduates worked in the fields of management (33.3 percent) and finance (22.2 percent). Presently, graduates are working in the same fields. Management: Initially, graduates worked in the field of management (33.3 percent). Presently, graduates are working in the field of management (40.0 percent). Marketing: Initially, graduates worked in the field of marketing (60.0 percent). Presently, graduates are working in the field of marketing (26.7 percent). Other majors did not have sufficient respondents. Respondents for this time period may not have had sufficient time to move into areas of major managerial responsibility.

Data for respondents who graduated between 1990 and 1993 are indicated in Table D. The data indicated that business administration had the greatest number of respondents, followed by accounting, business education, and management. This corresponds to the actual number of graduates for the period surveyed. The number of respondents who graduated between 1990 and 1993 who did not respond to the question of initial and present employment was 2.7 percent.

Conclusions and Recommendations

Business education respondents consistently found it increasingly more difficult to gain their first employment in teaching throughout the time period of the study. In recent time periods, only about one in two business graduate respondents were working in their major. Accounting respondents have tended to gain initial employment in the area of their major and gravitate into managerial responsibilities. Business administration respondents tend to work in a wide variety of business employment areas. The business administration respondents have had a propensity to move into different business fields of employment. Finance respondents indicated that they work in a variety of finance related fields. Management respondents in recent times have moved toward work in fields directly related to management.

Further study is recommended in the six major areas of emphasis to determine trends in fields of employment. Further study is also recommended to determine the demand for business graduates who seek endorsement and certification to teach in business education.

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Table A
Employment By Major Before 1970

		Percent of Majors by Grouped Years								
Fields of Employment	**Employment Period**	**Acct.**	**Bus. Admin**	**Bus. Educ.**	**Finance**	**Info. Proc. Comp. Sys.**	**Mgt.**	**Mkt.**	**Office Admin.**	**Econ.**
Accounting/Tax	Initial	28.6	6.3							16.7
	Present			7.7			100.0			16.7
Management	Initial	28.6	18.8							16.7
	Present	42.9	31.3	7.7		50.0				16.7
Marketing	Initial							100.0		33.3
	Present									16.7
Banking	Initial		6.3							
	Present		6.3	7.7						
Administrative Systems	Initial		6.3							
	Present			15.4						16.7
Computer	Initial					50.0				
	Present									
Finance	Initial									
	Present									
Insurance	Initial	14.3	31.3							16.7
	Present	14.3	6.3	7.7						
Education	Initial	14.3	6.3	100.0			100.0			
	Present	14.3	6.3	38.5						
Legal	Initial									16.7
	Present									
Small Business	Initial			7.7						16.7
	Present	25.0						100.0		16.7
Other	Initial	14.3	25.0			5.0				16.7
	Present	28.6	25.0	7.7		5.0				
Total	Initial	14.0	32.0	26.0		4.0	2.0	2.0		12.0
	Present	14.0	32.0	26.0		4.0	2.0	2.0		12.0

Table B
Employment By Major 1970-1979

		Percent of Majors by Grouped Years								
Fields of Employment	**Employment Period**	**Acct.**	**Bus. Admin**	**Bus. Educ.**	**Finance**	**Info. Proc. Comp. Sys.**	**Mgt.**	**Mkt.**	**Office Admin.**	**Econ.**
Accounting/Tax	Initial	55.6	13.5	6.3					20.0	
	Present	33.3	13.5							
Management	Initial	20.0	32.4	6.3	100.0		60.0			50.0
	Present	31.1	35.1	12.5	100.0		50.0	33.3	20.0	50.0
Marketing	Initial	6.7	10.8				20.0	66.7		
	Present	2.2	5.4	6.3						
Banking	Initial	2.2	5.4							
	Present								20.0	
Administrative Systems	Initial		5.4	18.8					60.0	
	Present	4.4	2.7	6.3					20.0	
Computer	Initial	6.7	5.4							
	Present	2.2								
Finance	Initial		5.4						20.0	
	Presen	t4.4	2.7							
Insurance	Initial			6.3			10.0			
	Present	2.2								
Education	Initial		5.4	62.5			10.0			
	Present	2.2	5.4	43.8						
Legal	Initial	4.4	5.4					33.3		
	Present	4.4	5.4	6.3			24.9	33.3		
Small Business	Initial		2.7							
	Present	4.4	13.5	12.5					20.0	
Other	Initial	4.4	8.1							50.0
	Present	8.9	16.2	12.5			24.9	33.3	20.0	
Total	Initial	34.6	28.5	12.3	0.8		7.7	2.3	3.8	1.5
	Present	34.6	28.5	12.3	0.8		7.7	2.3	3.8	1.5

Table C
Employment By Major 1980-1989

		Percent of Majors by Grouped Years								
Fields of Employment	**Employment Period**	**Acct.**	**Bus. Admin**	**Bus. Educ.**	**Finance**	**Info. Proc. Comp. Sys.**	**Mgt.**	**Mkt.**	**Office Admin.**	**Econ.**
Accounting/Tax	Initial	82.0	9.2	3.2	14.3		9.1			
	Present	59.0	4.6	9.7	21.4	50.0		18.2		50.0
Management	Initial	9.3	27.7	9.7	21.4	50.0	27.3	63.6		
	Present	18.0	36.9	3.2	7.1	50.0	18.2	18.2	25.0	50.0
Marketing	Initial		12.3	3.2	7.1		13.6	9.1		
	Present	3.3	6.2	3.2			31.8	27.3		
Banking	Initial		9.2	9.7	21.4		4.5		50.0	
	Present		9.2	35.7					25.0	
Administrative Systems	Initial	3.3	15.4	19.4			9.1		50.00	
	Present	1.6	4.6						50.0	
Computer	Initial		3.1			50.0				
	Present		3.1							
Finance	Initial		1.1	6.5	14.3					
	Present	6.6	7.7		21.4		4.5			50.0
Insurance	Initial		1.5		7.1		4.5			
	Present	1.6	3.1		7.1		9.1			
Education	Initial		1.5	48.4	14.3		4.5	9.1		
	Present		1.5	61.3	7.1		4.5	27.3		
Legal	Initial		1.5							
	Present	1.6	6.2							
Small Business	Initial	1.6	1.5					9.1		
	Present	6.6	3.1				4.5			
Other	Initial	3.3	15.4				27.3	9.1		
	Present	1.6	13.8	12.9			27.3	9.1		
Total	Initial	28.0	29.8	14.2	6.4	0.9	10.1	5.0	1.8	0.9
	Present	28.0	29.8	14.2	6.4	0.9	10.1	5.0	1.8	0.9

Table D
Employment By Major 1990-1993

		Percent of Majors by Grouped Years								
Fields of Employment	**Employment Period**	**Acct.**	**Bus. Admin**	**Bus. Educ.**	**Finance**	**Info. Proc. Comp. Sys.**	**Mgt.**	**Mkt.**	**Office Admin.**	**Econ.**
Accounting/Tax	Initial	61.8	7.4				6.7			
	Present	54.5	3.7				13.3			
Management	Initial	7.3	44.4		33.3		33.3	13.3	40.0	
	Present	7.3	44.4	11.8	33.3		40.0	20.0	20.0	
Marketing	Initial	3.6	11.1	23.5	22.2		20.0	60.0		50.0
	Present		7.4	11.8	11.1			26.7		50.0
Banking	Initial						6.7			
	Present	5.5			11.1					
Administrative Systems	Initial	3.6	14.8	23.5	11.1	100.0		6.7	60.0	
	Present	5.5	7.4	11.8	11.1	100.0		6.7	60.0	
Computer	Initial			5.9	11.1					
	Present									
Finance	Initial	7.3	7.4	5.9	22.2		13.3	6.7		50.0
	Present	3.6	7.4	5.9	22.2		6.7	13.3		50.0
Insurance	Initial	1.8	3.7					6.7		
	Present	7.3	3.7					20.0		
Education	Initial	1.8		35.3			6.7			
	Present	3.6		47.1			13.3			
Legal	Initial	3.6								
	Present	1.8								
Small Business	Initial	3.6					6.7	6.7		
	Present	3.6			11.1		13.3	6.7		
Other	Initial	5.5	11.1	5.9			6.7			
	Present	7.3	25.9	11.8			13.3	6.7	20.0	
Total	Initial	36.7	18.0	11.3	6.0	0.7	10.0	10.0	3.3	1.3
	Present	36.7	18.0	11.3	6.0	0.7	10.0	10.0	3.3	1.3

Impact of Information Technologies on Faculty and Students in Online Distance Education

Jensen Zhao
Melody Alexander
Ball State University

Heidi Perreault
Southwest Missouri State University

Lila Waldman
Bloomsburg University

Abstract

This research examines how business faculty and students use information technologies in distance education and how technologies impact on their productivity and preference. Data were collected from 81 professors across the nation and 153 graduate students from three states. The findings indicate that e-mail and Internet lecture and assignments were most heavily used and ranked at the top in enhancing user productivity; and Internet two-way video and audio were most preferred by faculty and students.

Introduction

As the world is entering a knowledge-based, Internet-driven economy, a college degree becomes a necessity for any individual who wants to be competitive and successful, regardless of his or her age, gender, and race (Fisher, 1997; Holstein, 1997). Over the last two decades the number of American college students over age 40 has more than tripled. Two-thirds of the older students are women; some of them have returned to school after their children get older, giving them time to develop a career ("Older Students," 1996). Nowadays, most full-time college students work part time; many part-time students work full time, commute, and often have families to support. Students have found that going to college in the traditional way is difficult. They need innovative ways to help them work more efficiently in this competitive world.

In response to such a high demand, colleges and universities have made efforts in integrating new communication technologies into online distance-education courses to support individualized, student-centered learning. According to the U.S. Department of Education, nearly 80 percent of all four-year and almost two-thirds of two-year public institutions offer students distance-education courses by using varied technologies. Of the institutions that did not offer distance education, 20 percent planned on offering some type of remote delivery service by 2002 (American Council of Education, 2000). As technologies become a growing part of expenses in online distance-education, it is important to assess how faculty and students use various communication technologies in distance education and how communication technologies affect teaching and learning productivity and user preference.

Problem and Purpose of the Study

The problem addressed in this study was to assess how faculty and students use various information technologies in online distance-education courses and how faculty and students perceive the impact of each information technology on their productivity and preference. In order to solve the problem, the following research questions were addressed:

1. What information technologies do faculty and students use more or less frequently in teaching and learning distance-education courses?
2. Do significant differences exist between faculty and students in using information technologies in their distance-education courses?
3. How do faculty and students perceive the impact of information technologies on their respective teaching and learning productivity in distance-education courses?
4. Do significant differences exist between faculty and students in perceiving the impact of information technologies on their teaching and learning productivity?
5. Which information technologies do faculty and students prefer more or less for distance-education courses?

6. Do significant differences exist between faculty and students in the preference of infromtion technologies for distance-education courses?

The purpose of the study is threefold: (a) to provide school administrators with the findings that they need to make cost-effective technology investment in distance education, (b) to provide information for educators who plan to teach distance-education courses for a better preparation, and (c) to provide the participating schools and faculty with feedback on how communication technologies are used in other schools and how other users perceive the impact of communication technologies on their productivity and preference.

Review of Related Literature

To clarify the need for this study and develop a reliable and valid questionnaire, the review of the related literature focuses on the following issues: (a) communication technologies in distance education, (b) technology impact on teaching and learning productivity, and (c) faculty and student preference of communication technologies.

Communication Technologies in Distance Education

The Internet/Web communication technologies are reshaping education on all levels and encourage educators to envision all the possibilities (Shank, 2000). With the multimedia capacity of the Internet and Web, Shank believes, traditional academic courses will increasingly be delivered online and that those courses will be both well designed and delivered. Jeff Joerres, senior vice president of Manpower, agrees and defines the Internet as the "cornerstone of our future educational efforts" (Behan, 1999, p. 35.). However, as Boettcher and Kumar (2000) warned, shifting programs and courses from "the physical to the digital campus" is not an easy undertaking. Considerable planning and development of an infrastructure are needed to avoid problems associated with distance-education programs.

Faculty and students' unfamiliarity with communication technologies is a major cause of the problems in distance education. For instance, students taking a course at the Grant MacEwan Community College in Alberta, Canada, indicated they had problems submitting assignments by email and obtaining and locating information. They also reported that the difficulties subsided as they gained experience in using the courseware. Faculty members at Grant MacEwan agreed that many of the problems associated with the distance-education courses they taught were technology related. Many teachers felt students overestimated their computer expertise when enrolling in the course. To assist the students with technology-related problems, support can be provided through an online help desk and student tutorials (White, 2000). Loeding and Wynn (1999) strongly recommend faculty attend training sessions or participate in the type of distance-education course that they will be delivering so that they can design the course and prepare materials more appropriately for the instructional medium being used.

Technology Impact on Teaching and Learning Productivity

Online distance education moves from the traditional instructor-centered teaching to student-centered learning. The instructor becomes a facilitator and coach who prompts learners and clarifies expectations. Students have different learning styles and backgrounds. Distance education provides a means for customizing the learning environment by allowing a student to determine how fast and how in depth to examine a subject. The instructor provides the resources, activities, and feedback but the student selects the pace. Distance learning allows the student who just needs an overview to move quickly through the information and the student who needs more thorough coverage the opportunity to examine multiple resources and to review as many times as necessary the activities and readings (Appleton, 1999).

However, distance-education students reported that the lack of face-to-face interactions with the professor and other students is a disappointment. Faculty members also expressed frustrations with communication issues. The MacEwan Community College faculty found it difficult to facilitate quality online discussions and noted that a lack of student incentive to participate (White 2000). Students in a distance setting may not be able to drive to campus during the instructor's office hours. Loeding and Wynn (1999) noted that having opportunities to talk to the instructor is important and suggested that instructors encourage students to use multiple means for communicating with them including the telephone, faxes, or email.

The increased reliance on email can be a problem for faculty. Although distance-education faculty members rated their personalized feedback to students through email as important, they reported that the sheer volume of email becomes problematic. In traditional courses students expect feedback at the next scheduled meeting, but being online the students expect immediate feedback. This expectation causes some faculty members to feel they have to be available to the students 100% of time including evenings and weekends (White, 2000).

Therefore, sharing guidelines with students on expected turnaround time for answering e-mails can help avoid student unrealistic expectations on receiving a response to an email or assignment. Setting online "office hours" when students can participate in instant messaging or chat room conversations is another means of providing students with planned access to the instructor (Berger, 1999).

Student-to-student communications also is important to the success of a course. Collaboration and team projects are standard components of college classes. Online courses often incorporate a threaded discussion as part of the course requirements. Students make comments, ask questions, and respond to other classmates' input. Cooper (2000) encouraged the use of a computer-based classroom management system. Such systems provide tools to support student interaction and collaboration as well as monitor student participation.

Faculty and Student Preference of Communication Technologies

From a student perspective the advantages associated with distance-learning courses are very personalized. A review of numerous studies on distance learning reported in the National Education Association and American Federation of Teachers commissioned report, *What's the Difference*, indicates that students select a distance-learning format for its flexibility and the "luxury" of not commuting to class (Institute of Higher Education Policy, 1999). Distance learning is a viable alternative to classroom instruction and provides increased opportunities for learning to both traditional and nontraditional students (Cooper, 2000). Students can participate in distance courses from any location and at any time instead of traveling to a campus on specific days. However, to truly meet the needs of the students, distance courses need to be student centered (Graves, 2000).

To motivate faculty to develop and teach online courses, some institutions provide faculty with training on using Web technologies and expect the faculty to take full responsibility for the course development while other institutions have created online help centers with technology support personnel and curriculum designers. Some institutions also offer financial incentives to faculty members to develop online courses through grants or additional salary options (Daily, 2000).

Whatever combination of training and support is offered to faculty, adapting to the new delivery format still will be a challenge. Building a personal relationship with students you may never meet in person is very difficult. White, who teaches online facilitation techniques for a Seattle consulting group, stresses that instructors must be willing to put in extra work to make online courses as successful as classroom-delivered courses (Sitze, 2000). When using interactive television, instructors found that they felt separated from their audience and the students reported the presentations were like "talking heads." The problem, according to Loeding and Wynn (1999), is that the instructors did not use interactive multimedia to create enough teacher-student interactions. Students at distance sites were hesitant to ask questions or interrupt the lecture. By incorporating engaging activities and planned interaction, the instructors were able to increase the amount of student participation and overall satisfaction with the class.

Instructor and student communication in all distance-learning formats differs from that in a classroom-based course. In the classroom there are multiple opportunities for immediate two-way communication. Berger (1999) suggests that instructors need to make good use of multimedia technologies at the start of a distance-learning course to build a "framework for effective communication." Her research indicated that student anxiety levels are highest at the start of a distance-learning course. Students, concerned that they are missing important announcements or misunderstanding the responsibilities or expectations of the course, contact the instructor to seek assurances and clarification. The volume of email and voice messages from the students then overwhelms the faculty members.

As the related literature shows, advanced information and communication technologies provide new delivery formats for distance education. Numerous studies identified positive and negative aspects that faculty and students experienced at the infant stage of online distance courses. As the online distance education has been growing for a number of years, a need exists for conducting a second-stage assessment of (a) faculty and student use of the technologies in online distance education, (b) the technology impact on their teaching and learning productivity and (c) their preferences of the technologies. In addition, comparing faculty and student use and experience of technologies in teaching and learning distance courses can identify the similarities and differences and areas for improvement.

Methodology

Based on the related literature review and researchers' experience of online distance education, two questionnaires were developed to identify faculty and student use and experience of online distance education. One questionnaire targeted student experience and the other, faculty experience. Both questionnaires contained the following sections: (a) demographics such as course and program level, majors, gender, age, and time of teaching or learning online courses, (b) use of communication technologies in teaching and learning online courses, and (c) technology impact on teaching and learning productivity and faculty and student preferences of the technologies. A twelve-member panel of experts that included distance educators and administrators validated the content of the questionnaire. Panel members were involved with the development and teaching of distance education courses. The panel's evaluation indicated that the instrument covered the stated objectives.

Through web-site e-mail addresses and phone numbers, all 335 AACSB accredited business schools in the United States were contacted and asked to provide the names of professors teaching a distance learning courses in a business area. Sixty-one institutions reported they had distance education programs in place and provided names and mailing addresses of 184 professors who taught business courses to distance-learning students. These business professors were sent a cover letter with the questionnaire. Approximately 6 weeks later, a follow-up letter coupled with the questionnaire was sent to non-respondents. Of the 184 professors identified as possible participants, usable responses were received from 81 resulting in a response rate of 48.5%.

To obtain students input, professors teaching distance-education courses were asked to help gather the data. The professors willing to participate either sent the instrument to their distance-learning students or provided a mailing list of the students enrolled in a distance-education course. Data were collected over a period of three academic semesters. A total of 153 usable questionnaires were received from the students of the state universities located in three states (one on the East Coast and two in the Midwest).

Student participation was voluntary and participation had no effect on a student's final grade. The students were informed through a letter accompanying the survey that the results were confidential that all responses and comments they provided would be combined with responses and comments provided by the students taking distance learning courses at other universities.

Table 1 illustrates the demographic profile of the responding faculty in comparison with that of the responding students. Each completed questionnaire from participating faculty and students was edited and coded. Frequency counts, percentage distributions, weighted means, and cross-tabulations were prepared for data analysis. Pearson chi-square test was used to determine any significant differences at the .05 alpha level between faculty and students in distance education.

Table 1
Demographic Profile of the Responding Faculty and Students
Faculty Group

Characteristics	Frequency	Percentage
Faculty Group		
Gender:		
Female	21	26%
Male	58	72%
Unidentified	2	2%
Total	81	100%
Ranks:		
Full professor	30	37%
Associate professor	30	37%
Assistant professor	9	11%
Unidentified	12	15%
Total	81	100%
Distance Teaching Experience:		
1 – 2 years	35	43%
3 - 4 years	26	32%
5 years or more	19	24%
Unidentified	1	1%
Total	81	100%
Student Group		
Gender:		
Female	83	54%
Male	66	43%
Unidentified	4	3%
Total	153	100%
Programs:		
MS/MA	90	58%
MBA	63	41%
Total	153	100%
Distance Learning Experience:		
First semester	90	59%
More than one semester	63	41%
Total	153	100%

tabel continued

Findings

The findings of the study are reported in the following sequence: (a) faculty and student use of information technologies in distance education and their usage differences, (b) faculty and student perceived impact of information technologies on their productivity in distance education and their differences in productivity, and (c) faculty and student preferences of information technologies in distance education and their differences in preference.

Faculty and Student Usage of Technologies

Research Question 1 asked, "What information technologies do faculty and students use more or less frequently in teaching and learning distance-education courses?" As Table 2 shows, the majority of both faculty (67%) and students (64%) reported heavy use of e-mail in the first place, followed by heavy use of Internet lecture notes and assignments (63% vs. 59%, respectively). Around one third to half of the faculty and students indicated they use the following technologies heavily or regularly: Internet discussion group, TV-based two-way video and audio, Internet two-way video and audio, Internet chat group, and telephone and voice mail.

However, more than 50% of the faculty and students reported they did not use the following technologies for teaching and learning distance-education courses: TV-based one-way video and two-way audio (89% vs. 67%), TV-based one-way video & audio (89% vs. 63%), Internet one-way video and two-way audio (71% vs. 51%), special computer network (70% vs. 51%), and Internet one-way video and audio (68% vs. 55%).

Research Question 2 asked, "Do significant differences exist between faculty and students in using information technologies in their distance-education courses?" The Pearson chi-square test identified that significant differences existed between faculty and students in only three information technology areas: Internet one-way video and two-way audio, traditional mail correspondence, and TV-based one-way video and audio, which were not at all rated as heavily used or regularly used technologies (see Table 2).

Technology Impact on Faculty and Student Productivity

Research Question 3 asked, "How do faculty and students perceive the impact of information technologies on their teaching and learning productivity in distance-education courses?" As Table 3 shows, the majority of the faculty respondents reported that e-mail (93%), Internet lecture notes and assignments (74%), telephone and voice mail (68%), and fax (51%) increased their productivity in teaching distance-education courses. By contrast, the majority of the student respondents stated that only e-mail (81%) and Internet lecture notes and assignments (82%) enhanced their productivity in distance learning.

However, around one third to half of both faculty and students responded that the following 10 technologies had not impact on their productivity in distance education: Internet/Web-based discussion groups (39% vs. 41%), Internet instant chat groups (35% vs. 42%), traditional mail correspondence (48% vs. 32%), videotapes/CD/DVD mailed to students (32% vs. 39%), special computer network (42% vs. 35%), Internet one-way video and audio (44% vs. 49%), Internet two-way video and audio (46% vs. 49%), TV-based one-way video and two-way audio (43% vs. 37%), Internet one-way video and two way audio (49% vs. 50%), and TV-based one-way video and audio (43% vs. 48%).

In addition, except for 17% of the faculty stating that traditional mail correspondence impeded their productivity, less than 8% of the faculty and students reported that the listed 15 technologies impeded their productivity in distance education. In the meantime, 20% to 63% of the faculty and students revealed that they had not yet used at least 11 of the 15 technologies.

Research Question 4 asked, "Do significant differences exist between faculty and students in perceiving the impact of information technologies on their teaching and learning productivity?" Table 3 shows significant differences between the faculty and students in perceiving that the following five technologies affected their productivity in distance education: (a) telephone and voice mail, (b) fax, (c) TV-based two-way video and two-way audio,(d) traditional mail correspondence, and (e) TV-based one-way video and two-way audio.

Faculty and Student Preferences of Technologies

Research Question 5 asked, "Which information technologies do faculty and students prefer more or less for distance-education courses?" Table 4 illustrates the weighted means of the faculty and student preferences, respectively. Both faculty and students ranked the Internet two-way video and audio technology (3.1 vs. 3.5) at the top of the preference list, followed by e-mail (3.0 vs. 3.0) and Internet one-way video and two-way audio (2.6 vs. 2.4). While the faculty ranked TV-based two-way video and audio with a weighted mean of 2.6, students rated it with a weighted mean of 1.6 only. Faculty and students ranked the remaining 11 information technologies either as less preferred or least preferred.

Research Question 6 asked, "Do significant differences exist between faculty and students in the preference of information technologies for distance-education courses?" As Table 4 shows, significant differences existed between the faculty and students in their preferences of using (a) TV-based two-way video and audio, (b) Internet/Web-based discussion groups, and (c) TV-based one-way video and two-way audio. The faculty preferred using TV-based two-way video and two-way audio and Internet /Web-based discussion groups significantly more than students do. By contrast, students indicated the same preference of using (a) TV-based two-way video and audio and (b) TV-based one-way video and two-way audio, whereas the faculty reported a significantly lower preference of using TV-based one-way video and two-way audio.

Summary and Discussion

E-mail and Internet lecture notes and assignments were the two most heavily used tools among the majority of the faculty and students in distance education. Also used heavily or regularly by 30% to over 50% of the faculty and students were Internet discussion groups, TV-based two-way video and audio, Internet two-way video and audio, Internet chat group, and telephone and voice mail. Among these seven heavily or regularly used tools, five belong to the Internet technologies. This finding supports the viewpoints that the Internet is the cornerstone of our future educational efforts (Behan, 1999) and the Internet/Web technologies are reshaping education on all levels (Shank, 2000).

Second, while most faculty stated that e-mail, Internet lecture notes and assignments, telephone and voice mail, and fax increased their teaching productivity, most students reported that only e-mail and Internet lecture notes and assignments enhanced their learning productivity in distance learning. By contrast, around one third to half of the faculty and students reported that the following technologies had not impact on their productivity or were not used in their distance education: Internet/Web-based discussion groups, Internet instant chat groups, traditional mail correspondence, videotapes/CD/DVD mailed to students, special computer network, Internet one-way video and audio, Internet two-way video and audio, TV-based one-way video and

Table 2
Faculty and Student Usage of Communication Technologies in Distance Education

Technologies	Heavy Use		Regular Use		Occasional Use		Not Used		
	Faculty	Students	Faculty	Students	Faculty	Students	Faculty	Students	
E-mail	67%	64%	17%	19%	5%	5%	11%	12%	
Internet lecture notes & assignments	63%	59%	19%	25%	2%	3%	16%	13%	
Internet/Web-based discussion groups	37%	39%	15%	19%	18%	22%	30%	20%	
TV-based two-way video & audio	31%	25%	15%	14%	6%	20%	48%	41%	
Internet two-way video & audio	30%	16%	6%	15%	17%	22%	47%	47%	
Internet chat groups	22%	23%	11%	18%	31%	28%	36%	31%	
Telephone & voice mail	20%	12%	30%	24%	23%	35%	27%	29%	
Special computer network	15%	12%	9%	17%	6%	20%	70%	51%	
Videotapes/CD/DVD mailed to students	10%	8%	14%	16%	32%	37%	44%	39%	
Internet one-way video & audio	10%	5%	11%	11%	11%	29%	68%	55%	
Fax	10%	8%	6%	19%	48%	33%	36%	40%	
Internet one-way video & two-way audio	9%	7%	6%	16%	14%	26%	71%	51%	*
Traditional mail correspondence	1%	3%	15%	18%	30%	43%	54%	13%	*
TV-based one-way video & audio	1%	3%	6%	12%	4%	22%	89%	63%	**
TV-based one-way video & two-way audio	1%	1%	6%	12%	4%	20%	89%	67%	

* Difference significant at $p < .05$. ** Difference significant at $p < .01$.

Table 3

Impact of Communication Technologies on Faculty and Student Productivity in Distance Education

Technologies Affecting Productivity	Increase		No Impact		Impede		Not Used		
	Faculty	Students	Faculty	Students	Faculty	Students	Faculty	Students	
E-mail	93%	81%	1 %	9%	6%	2%	0%	8%	
Internet lecture notes and assignments	74%	82%	14%	11%	5%	1%	7%	6%	
Telephone & voice mail	68%	39%	19%	29%	2%	3%	11%	29%	**
Fax	51%	30%	39%	41%	1%	4%	9%	25%	*
Internet/Web-based discussion groups	47%	50%	27%	33%	5%	2%	21%	15%	
TV-based two-way video & audio	43%	17%	26%	41%	7%	5%	24%	63%	**
Internet chat groups	38%	29%	35%	42%	7%	3%	20%	26%	
Traditional mail correspondence	34%	35%	48%	32%	17%	4%	21%	29%	**
Videotapes/CD/DVD mailed to students	32%	18%	32%	39%	5%	3%	31%	40%	
Special computer network	20%	28%	42%	35%	1%	3%	37%	34%	
Internet one-way video & audio	14%	3%	44%	49%	5%	4%	37%	44%	
Internet two-way video & audio	12%	7%	46%	49%	4%	2%	38%	42%	
TV-based one-way video & two-way audio	8%	23%	43%	37%	7%	3%	42%	37%	**
Internet one-way video & two-way audio	6%	3%	49%	50%	5%	3%	40%	44%	
TV-based one-way video & audio	6%	5%	43%	48%	7%	3%	43%	44%	

two-way audio, Internet one-way video and two way audio, and TV-based one-way video and audio.

Table 4
Faculty and Student Preferences of Communication Technologies in Distance Education

Technologies	Weighted Mean[a]		
	Faculty	Students	
Internet two-way video & audio	3.1	3.5	
E-mail	3.0	3.0	
Internet one-way video & two-way audio	2.6	2.4	
TV-based two-way video & audio	2.6	1.6	*
Telephone & voice mail	1.8	1.8	
Internet one-way video & audio	1.7	1.5	
Fax	1.5	1.7	
Videotapes/CD/DVD mailed to students	1.5	1.3	
Internet/Web-based discussion groups	1.5	1.0	*
TV-based one-way video & two-way audio	1.1	1.6	*
Traditional mail correspondence	1.1	1.4	
Special computer network	1.1	1.4	
Internet chat groups	1.1	1.2	
Internet lecture notes & assignments	1.1	1.0	
TV-based one-way video & audio	1.0	1.2	

Note. [a] Responses to a rank scale where 5 = most preferred and 1 = least preferred. * Difference significant at $p < .05$.

However, very few faculty and students reported the listed 15 technologies impeded their productivity in distance education. As the literature (e.g., Loeding and Wynn,1999; White, 2000) indicates, to make the new technologies as productivity enhancers, both faculty and students need some training and need to go through the learning curve to make full use of new technologies. The finding that using e-mail helped 93% faculty and 81% students increase their productivity in this study is an example of the improved user experience with the new information technology, which was reported problematic in distance education from the previous studies (e.g., Berger, 1999; White, 2000).

Third, e-mail is one of the two highly preferred information technologies among the faculty and students. The respondents also reported that they used e-mail most heavily and, in return, it had the most positive impact on their productivity. However, a technology's frequent usage and positive impact on user productivity does not always mean the user prefers the technology. For example, most faculty and students used Internet lecture notes and assignments heavily or regularly in distance education and also reported its highly positive impact on their productivity. However, both faculty and students ranked it as the last second on the preference list. Another example is the Internet two-way video and audio, which is ranked by both faculty and students as the number one preferred, but only about one third of faculty and students used it on a heavy or regular basis and indicated little positive impact on their productivity. The finding indicates that both faculty and students prefer two-way video and audio communication rather than one-way textual communication. At the same time, it may imply the importance of faculty and student technology training in distance education.

Finally, few significant differences were found between the faculty and students in using information technologies and their impact on user productivity and preference in distance education. Among the few significant differences, no single difference was repeatedly identified in technology usage frequency, impact on user productivity, and user preference. This finding may imply that the user difference is probably not the key factor in designing technology training programs in distance education. Rather, the user preference may be a self-motivation factor (Baron & Byrne, 1994), which would drive users intrinsically to learn to use new technologies, if the user preference is designed into a training program.

Pedagogical Implications

When preparing for teaching a distance-education course, an instructor needs to be aware that the following four information technologies are highly preferred by faculty and students: Internet two-way video and audio, e-mail, Internet one-way video and two-way audio, and TV-based two-way video and audio. Learning these technologies and using them in the distance-education course should enhance user experience and productivity in teaching and learning distance-education courses.

Both faculty and students should be aware that a variety of information technologies are used in distance teaching and learning. Among them e-mail and Internet lecture notes and assignments are the two most heavily used tools, which highly enhance both faculty and student productivity. Therefore, these two tools should be included as the basic information tools in distance education.

As the findings of this study and the existing literature indicate the importance of technology training in distance education, school administrators should allocate a budget for technology training when planning for distance-education programs. With proper training, instructors and students will be able to effectively use new information technologies to make the distance education a success.

Recommendations for Further Research

Based on the findings and limitations of the study, the following recommendations are made for further research:

1. Further research should be undertaken to replicate this study among undergraduate students and instructors involved in distance education to determine whether similarities exist between graduate and undergraduate distance education.

2. Further research should be undertaken to evaluate the relationship between the technology training before teaching and learning distance-education courses and the teaching and learning outcomes of the distance-education courses.

These further studies will help ascertain how technology training affects teaching and learning outcomes and which information technologies or combinations of them are more effective tools in the distance teaching and learning environment at undergraduate and graduate levels.

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The Impact of Instruction on the Use of On-line Help on Computer Novices' Ability Tasks

Joel A. Whitesel
Ball State University

Abstract

This study investigates the impact of instruction on the use of on-line help on computer novices' ability to resolve computer problems. The ability to use on-line help when working with a computer software is often limited by the systems used for accessing the help. A menu based system is difficult to navigate for large or complex software. Keyword access systems can be confusing for users with limited vocabulary and knowledge of computers. Participants in this study were exposed to a brief instructional package, then tested on ability to develop keywords for use in accessing on-line help and on their ability to complete unfamiliar computer problems. Participants were divided into a control group and two types of treatments, one learner-controlled and one program-controlled. Subjects who completed either of the treatments scored significantly better on their ability to develop appropriate keywords and, in the case of the learner controlled group, were more likely to use help in resolving unfamiliar computer problems. The performance of the two treatment groups did not, however, significantly improve over a control group. These results led to several implications for instructors in beginning computer classes.

Literature Review

The way we interact with software can impact our ability to resolve computer tasks. When novice computer users approach a computer software, they may not be aware of the support materials built into the system. In researching for this study, I examined several topics related to the use and design of help.

Performance Support Systems

Performance support systems, are tools designed to provide assistance when and as needed by a user. This type of system can be paper based or it can be an Electronic Performance Support System (EPSS). The chief goal for such tools is to support users while reducing the need for extensive training before starting a job. A good support system will allow users to achieve productivity faster by allowing them to begin working while simultaneously supporting their learning (Carr, 1992; Malcolm, 1998; Raybould, 1998). "An example of an EPSS can be found in the support system for Microsoft Excel. Users do not necessarily know all the functions available in their software...This support system also includes EPSS-type applications such as wizards and cue cards" (Cole, Fischer, & Saltzman, 1997, p. 50).

This type of support system is becoming increasingly popular in the corporate environment. Potentially, a support system can reduce training time, reduce the need for mastery before starting a job, increase quality and empower workers. These attributes must be balanced against development costs, implementation costs and possible training needs (Desmarais, Leclair, Fiset, & Talbi, 1997).

Raybould (1998) recommended several goals for support systems, including a focus on knowledge, emphasis on recognition instead of recall, and a focus on measurable performance. The issue of recognition instead of recall is a real weakness of Microsoft's help system when used as a support system. The animated character interface requires the user to ask a question to query the database of information. Unfortunately, to get accurate results with this type of interface, the user must include some key terms. Knowledge of proper terminology is an area that novice users are still developing.

Newman and Riner (1997) stated, "If trainers continue to address workplace performance using the approaches of the past 30 years, their efforts are certain to collapse and lead to frustration.... Traditionally, training activities have focused on teaching content. But now we must provide workers with know-how systems and teach them how to teach themselves" (p. 41). How much time is spent teaching computer novices to use a particular software application versus learning how to resolve unfamiliar problems using that software? If students do not learn to make use of the one reference tool that will always be nearby, will they be at a disadvantage when they are working outside the traditional classroom?

Learner vs. Program Control

Giving control to learners or managing control for the learners (PC–program control) has been widely studied in the field of education (Freitag & Sullivan, 1995; Hicken, Sullivan, & Klein, 1990; Kinzie, 1990; Kinzie, Sullivan, & Berdel, 1988; Steinberg, 1989). Studies examining which method leads to the greatest performance are numerous. Allowing learners to control how much they review materials, when they seek help, when they study, how fast they study, and so on seems like a desirable situation on the surface.

However, if learners control their own use of exercises, reviews, and paths through educational resources, they may not use them at the appropriate times. Lawless and Brown (1997) stated, "Learners... must not only be able to understand the information presented, but must also be able to identify what information will further enhance understanding, and how to access this information" (p. 122). This ability to track their own performances is not always within the grasp of learners, especially learners new to a particular subject matter.

Gay (1986) and Lee and Lee (1991) found that users with strong knowledge of their field could self-manage the acquisition of additional knowledge. Novice learners, however, needed explicit instruction on when to use resources to bolster their learning. This need for explicit instruction on when to use resources may reduce the effectiveness of teaching learners to use on-line help, as informing learners exactly when to use help would be difficult to accomplish in the classroom. Training and practice on when to access help may assist learners in developing this skill. Learner control research has shown that learners tend not to make use of extra materials when they are not required to use them or when they don't have prior knowledge of the subject matter (Gay, 1986; Gray, 1989; Lee & Lee, 1991; Shin, Schallert, & Savenye, 1994).

Despite all of the studies, the advantages and disadvantages of learner and program control have not been completely settled. However, a rigorous meta-analysis was conducted by Niemiec, Sikorski, and Walberg (1996). In their opening statements, they suggested one criticism of learner control is that it allows students, particularly young learners and those with little previous subject knowledge, to make decisions without adequate knowledge of their performance. Learner control was neither better nor worse than program control when measured across the extensive studies and past meta-analyses included in this work.

Help Design

The design of on-line help has a direct impact on how useful it is for users. Newman and Riner (1997) recommended two attributes essential for electronic help: accessibility and accuracy. Accessibility, in this case, refers to the ability to quickly and reliably find desired information. They felt that a good help system would remove part of the need for covering basic concepts in a learning situation. "With the ability to access particulars as needed, it seems ludicrous to continue teaching fundamentals" (p. 43).

The design of help also impacts its effectiveness (Warren, van Dijk, & Jobing, 1997). Boekelder (1996) showed that presenting information in a table format allowed subjects to use the information more quickly than integrated lists or paragraph style formats. Boekelder's research also found that error rates were not influenced by style of written instructions.

The speed with which a user was able to complete a task was improved by 35% when using a visual manual as compared to a non-visual manual (Van Der Meij, 1996). The inclusion of visual elements can help acclimate learners to software. Electronic instructions, available to users while they are on-line with their computers, allow the use of hypertext, graphics, animations, sound, and video. When an expert is not available, an on-line help system is a good alternative in developing a user's knowledge of the subject (Gwei & Foxley, 1990).

Another advantage of using on-line help is that searches have the potential to be faster than using a book or other paper source (Jansen & Steehouder, 1994). Westendorp (1996) conducted an experiment comparing the performance of users who were given instructions with text only, with pictures, and with animations. He concluded that using text only is faster if users are going to work strictly from instructions but that adding animations resulted in greater learning and less reliance on the instructions for future task performance.

Grice and Ridgway (1995) claimed that learners will seek out information in a support system and immediately put it into their own context and usage. Once students have developed their ability to query through a help system, they may develop a sense of "knowing" that desired information is somewhere in the help files. Beishuizen, Stoutjesdijk and Zanting (1996) concluded that using hypertext style information sources was best done in conjunction with a linear text. That way students could use the hypertext system when faced with a particular problem and the more traditional linear source for studying and first-time learning. This is precisely the function that on-line help systems can serve in the computer literacy classroom.

Rissland (1984) discussed the two primary methods of providing access to help: hierarchical menus and keyword input. Each of these methods has potential problems. The menu method can become overwhelmingly large when the help system is large or complex. Users faced with a menu of thousands of choices or smaller menus that lead to sub-menus and from there to sub-sub-menus can be overwhelmed with the task of navigating effectively. Keyword systems can be effective only if the user uses the proper keywords. Unless the system is thoroughly cross-referenced, users must be very precise with their keyword choices. As an example, searching for "quit" is ineffective if the system is organized with the word "exit". Many types of software are now including "wizards", "coaches", and other software help that uses the computer operator's data for examples and illustrations.

Gwei and Foxley (1990) suggested that an interface should help develop user's task vocabulary by exposing them to correct terminology while allowing the use of less precise language for their searches. Helping novice computer users learn to access help more efficiently may reinforce the development and use of proper terminology.

Desmarais et. al (1997) recommended that support systems be considered an integral part of initial training because they can improve training efficiency and because the user must get acquainted with the support system before they can use it efficiently on the job. Even with the extensive cross-referencing used by Microsoft, novice users may need additional training on using the help system before they will be able to use it effectively.

Need for the Study

The definition of computer literacy is expanding from knowledge of a word processor, spreadsheet, and presentations software to include subjects like databases, Internet usage and web page design. As expectations for student learning increase, demands on business educators expand as well. The complexity of the modern computer lab can make it difficult for instructors to work individually with students. In addition, some students will not ask an instructor or peer for help when they have problems in class (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, & Palincsar, 1991; Butler, 1998; Perrine, Lisle, & Tucker, 1995). Self-teaching of computer software is seldom effective (Santhanam & Wiedenbeck 1991; Cooper, 1991). Determining if on-line help is useful necessary to evaluate its use in the computer literacy classroom.

Statement of the Problem

This study was intended to establish the relative worth of including instruction on the use of on-line help as an element in the computer literacy classroom. The following research questions were examined:

- Does instruction on using on-line help improve computer novices' ability to develop appropriate keywords for searching help?
- Does instruction on using on-line help increase the use of on-line help by learners confronted with unfamiliar computer tasks?
- Can instruction on using on-line help impact computer novices' performance on unfamiliar computer tasks?
- If learners control their own progression through instruction on using on-line help, will their performance on unfamiliar computer tasks turn out differently than learners whose instruction was set by the program?

Purpose of the Study

This study examined the impact of instructing computer novices on the use of Microsoft Office 2000's on-line help system. If this instruction allows students to make better use of help and improves performance, the content of the computer literacy classroom may be adjusted accordingly. Therefore, the purpose of this study was to provide information for classroom teachers and administrators that may help them decide if instruction on the use of on-line help should be a incorporated into the curriculum.

Methodology

In order to answer the research questions, this study presented participants with an HTML-based computerized instructional treatment on how to use help, then measured their ability to develop keywords for searching in help and their performance on two unfamiliar computer tasks. Entrance and exit questionnaires were used to gather additional data.

Treatment Materials

The treatment materials consisted of 36 screens of information about how to access Microsoft Office help using the animated interface, the role of keywords in help searches, and information about the way help is organized. Embedded questions gave users the opportunity to test their knowledge and receive feedback as they progressed through the materials.

The materials for the first treatment group were learner controlled. The information screens all had active links to the other pages of contents and users were informed that they could examine the material as they chose. The second group received identical materials with the exception that the links were deactivated and users had to progress through the training materials under the order imposed by the program. The control group reviewed training materials related to computer cleaning and maintenance. All participants completed an entrance and exit questionnaire, along with assessments measuring ability to develop appropriate keywords for searching help and ability to complete unfamiliar tasks in Word and Excel.

Participants

The participants for this study were enrolled in a course entitled Business Information Systems at Ball State University during the spring semester of the 2001-2002 academic year. Ten sections of this course were offered with a total enrollment of 430 students. Seven sections were randomly selected and used to solicit volunteers. Volunteers were randomly assigned to a treatment. In total, 106 participants completed the study. Table 1 shows more detail on the participants.

Table 1
Participant Data

Category	Control (N=32)	Trt.#1 (N=39)	Trt.#2 (N=35)
Age Range			
17-20	25	28	26
21-24	5	9	8
25-up	2	2	1
Gender			
Male	20	24	21
Female 12	15	14	
Prior Computer Training			
no prior courses	11	15	14
high school course to one college course	17	21	16
more than one college course	4	3	5

Findings

Keyword Development

The final screen of information in the treatment materials (including those of the control group) linked to a Microsoft Word document that presented participants with a formatted table and a series of six questions. Participants were to answer each question by entering the word or phrase they would use to search for help on how to format the table. Answers were judged as appropriate if, when entered into the help system, the results included a link to usable help

Table 2
Keyword Assessment Scores

	n	Mean	sd
Control	32	3.22	1.21
treatment #1	39	4.69	.77
Treatment #2	35	5.03	1.29

Table 3 shows the results of an ANOVA which found a significant difference existed between the groups. Comparisons of the data were conducted using Bonferroni's t in order to reduce the chance of type I error. The results of the comparisons (shown in Table 4) showed a significant difference (at the .05 level) between the control and the two treatments. Participants who received either of the treatment materials generated usable keywords at a higher rate than did the control group. The two treatment groups did not differ significantly from each other.

Table 3
ANOVA: Number of Appropriate Keywords Developed by Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	61.63	2	30.82	25.44	.001*
Within Groups	124.75	103	1.21		
Total	186.38	105			

Table 4
Group Comparisons: Number of Appropriate Keywords (Using Bonferroni's t)

Groups	Mean Difference	Std. Error	Significance
control vs. treatment #1	-1.47	.26	.001*
control vs. treatment #2	-1.81	.27	.001*
treatment #1 vs. treatment #2	-.34	.26	.580

Increases in Help Use

The second research question asked if instruction on the use of on-line help increased participants' use of on-line help when confronted with an unfamiliar computer task. Information on participants' use of on-line help was derived from responses to the exit questionnaire.

Two questions (#2 and #5) on the exit questionnaire were used to determine if the participants had made use of on-line help. Question #2 asked, "What steps did you take to figure out how to do the exercises in Word and Excel?" Responses were coded as: (1)did use help, and (2) did not use help. The next question was used as a backup to the first, in order to provide a more reliable measure of the answer. Question #5 asked, "If you used on-line help to complete the assessments, how helpful was it in providing the answer to your questions?"

Table 5
Reported Help Usage

	Tried Help		Didn't Try Help	
Group	Count	%	Count	%
control	16	50.0	16	50.0
treatment #1	35	89.7	4	10.3
treatment #2	26	74.3	9	25.7

Results were tested using Kruskal-Wallis and showed the difference in help usage was significant (df=2, chi-square=13.91, p=.001). Post hoc comparisons of the data were conducted using Tamhane's T2, a conservative method of conducting nonparametric post hoc comparisons. Results showed the only significant difference was between the control group and treatment #1 (the learner-controlled treatment group). Details are shown in Table 6.

Table 6
Group Comparisons: Use of On-line Help (Using Tamhane's T2)

Groups	Mean Difference	Std. Error	Significance
control vs. treatment #1	.40	.10	.001*
control vs. treatment #2	.24	.12	.121
treatment #1 vs. #2	-.15	.09	.246

Impact on Performance

The third research question addressed the impact of instruction in the use of on-line help on participants' ability to complete unfamiliar computer tasks. This was measured by combining participant scores from two assessments. The first assessment asked participants to develop a telephone message form using Microsoft Word. This form was to be developed using Word's electronic form features (a software function that had not been covered in the participants' previous coursework). Participants were asked to create a telephone message form that could be filled out entirely on screen. They were told the elements to include, but were given no instruction on how the project could be accomplished. Their results were scored on a scale from 1-10.

The second assessment document for this dependent variable was a project to be developed using Excel. Participants were asked to enter a series of numbers and labels into the spreadsheet. They were then asked to generate several formulas, sort, shade and chart the information in a pie chart which was to be rotated and labeled. The results of the Excel assessment were scored on a scale from 1-10.

Scores for the two assessments were then added together to create a composite score that could range from zero to twenty points. Scores on this composite represented the dependent variable of how instruction on using on-line help impacted computer users' ability to resolve unfamiliar tasks. These data did not meet the assumptions necessary for using ANOVA, as Levene's test for homogeneity of variance revealed that the different groups did not have equal variances. Since the ANOVA assumptions were not met, I used the Kruskal-Wallace test to analyze the data.

No significant differences in performance on unfamiliar tasks were found (df=2, Chi-square=3.22, significance=.200). The two treatments did not cause a significant change in the participants' ability to resolve the unfamiliar computer tasks used as assessments. Table 7 shows the means and standard deviations of each group.

Table 7
Performance on Unfamiliar Tasks

Groups	n	Mean	S.D.
control	32	7.94	5.39
treatment #1	39	8.26	3.33
treatment #2	35	9.46	3.62

Summary

The following summary is based on the findings and addresses the research questions:

1. Research question 1 looked at the ability of computer novices to develop keywords appropriate for searching Microsoft's on-line help system. The ability to develop keywords is the initial step in finding appropriate content in the system. As a result of the brief instructional treatment used in this study, participants were significantly better at developing keywords than were those participants who were members of the control group.

2. Research question 2 sought to determine if participant's would increase their use of help as a result of experience with the training materials. This study found that while both treatment groups used help more than the control group, the learner controlled treatment group did so significantly more often.

3. The third research question examined the impact of the instructional treatments on participants' ability to resolve unfamiliar computer problems. No significant differences were found between the groups with regards to their ability to resolve the computer assessment problems.

4. The last question looked at any differences that may result from treatments being controlled by the learners or by the program built into the treatment. With the exception that learner-controlled subjects were the only treatment to show a significant difference in help use (as compared to the control), the two groups were not different.

Implications

The results of research questions 1 and 2 indicate that a brief instructional treatment is sufficient to make students in an early computer class better at developing terms for searching help and more likely to make use of that help when confronted with an unfamiliar computer problem. This use did not improve their ability to resolve those problems, however.

The treatments in this study were not extensive or time consuming for students. Despite the lack of significant improvement in problem solving, the results seem encouraging that students can be taught to make better use of the on-line help system. The computer literacy classroom may do well to include a lesson on the design and access of help systems when teaching students to use a new software.

Recommendations for Future Research

Based on the findings of this study, the recommendations for further research include the following:

1. The assessments used to measure problem resolution were hands-on oriented projects completed by volunteers. The scores they achieved were not a part of their course grades. Assessing results that were more important to the participants may provide a better measure of the impact of instruction on the use of on-line help.
2. Given that the participants developed their ability to develop keywords, it is possible that they were not able to make full use of the help information that they found. Further study into the readability and usability of on-line help in popular software may be able to uncover details on how usable that information is.
3. Research into the use of on-line help by a range of users (from very experienced to novice) would give insight into how experience impacts the role of on-line help.

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Perceptions About Three Indigenous English-Language Accents from Prospective and Practicing Argentine Providers of Business-Related Language Services

Diana J. Green
Weber State University

James Calvert Scott
Utah State University

David D. Rosewarne
University of Surrey, Roehampton

Abstract

Prospective and practicing providers of business-related language services in Argentina ranked three indigenous English-language accents in this order: first, General American English; second, Received Pronunciation English; and third, Estuary English. Six statistically significant differences were found to be related to demographic characteristics. Respondents also rated the attributes of each of the studied accents on 14 semantic differential scales. Each of the studied English-language accents had an individualistic attribute profile pattern, although those for the General American English and Received Pronunciation English accents were somewhat alike. Related recommendations are provided.

Study Background

English is widely viewed as the dominant business language worldwide (Colback & Maconochie, 1989), but it exists in many different forms around the world (Kameda, 1992). Businesspersons and providers of business-related language services increasingly want to know which English-language accent(s) might give them a competitive advantage over speakers of other accents (DeShields, Kara, & Kaynak, 1996). They realize that they would benefit by knowing how both native and nonnative English speakers from around the world perceive English-language accents, which are the language tools on which they often rely as they conduct business (Scott, Green, & Rosewarne, 1997). However, very little is actually known about perceptions of English-language accents from business-related perspectives.

Purpose and Research Questions

Given few facts about perceptions of English-language accents in business-related situations, a study was conducted with prospective and practicing providers of business-related language services in Argentina since they communicate on behalf of Spanish-speaking and English-speaking businesspersons working there. Its purposes were to identify perceptions about three indigenous English-language accents from prospective and practicing providers of business-related language services and to examine the similarities and differences in their perceptions of these English-language accents. The research questions follow:

1. What is the ranking order of the three indigenous English-language accents?
2. What are the similarities and differences in the perceptions of these English-language accents as reflected by statistical comparison and by semantic differential scale comparison?

Literature Highlights

A thorough investigation of the business and linguistics literatures was conducted and is briefly highlighted here. It confirmed that business-related research about perceptions of English-language accents is definitely needed (a) to help businesspersons derive the complete benefits of the English language as a tool in increasingly competitive marketplaces (e.g., DeShields et al., 1996; Scott et al., 1997; Scott, Green, & Rosewarne, 1998; Scott, Green, and Rosewarne, 2001; Scott, Green, Rosewarne, & Neal, 1999; Scott, Rosewarne, & Green, 2001) and (b) to fill voids in the business and linguistics literatures (e.g., Rosewarne, 1985, 1990; Scott et al., 1997, 1998, 1999, 2001).

Only seven closely related studies in the business and linguistics literatures were found with business-related respondents. One of these sampled, among others, a few Japanese international business students (Chiba, Matsuura, & Yamamoto, 1995). Three studies incorporated native and nonnative English-speaking prospective and practicing businesspersons enrolled in the undergraduate business communication course at two universities in the Intermountain West (Scott et al., 1997, 1998) and at one university in Hawaii (Scott et al., 1999). Two studies incorporated prospective and practicing businesspersons enrolled at one British business school (Scott et al., 2001) and at two Malaysian business schools (Scott, Rosewarne, & Green, 2001). The other study incorporated salespeople and customers in multicultural business settings (DeShields et al., 1996).

Studies found in the linguistics literature provided primary methodological guidance. These studies supported the use of the well-regarded matched-guise linguistic technique with semantic differential scales (e.g., Agheyisi & Fishman, 1970; Cargile, Giles, Ryan, & Bradac, 1994) and the use of representative English-language accents (e.g., Rosewarne, 1985, 1990). A few studies included varieties of one language (e.g., Giles, 1970, 1971a, 1971b, 1972; Rosewarne, 1985, 1990) or native and nonnative speakers of a language (e.g., Rubin & Smith, 1990; Scott et al., 1997, 1999, 2001).

Only one study provided information about prospective and practicing Argentine providers of business-related language services enrolled in English-language teacher-training programs (Basso, 2002).

Study Procedures

This study used the most common linguistic technique for gathering data about accent-related perceptions, the matched-guise technique (Cargile et al., 1994). This technique uses specified accents as the only study variables. Sequential recordings of the same message delivered in multiple accents by one male phonologist (language sound specialist) constituted the studied matched guises. These repeated recordings of the identical content were delivered in three indigenous English-language accents. General American English is the standard United States accent spoken outside of the northeastern and southern regions of the country by well-educated natives. Received Pronunciation English is the regionally neutral, prestigious standard British accent popularly known as either BBC (British Broadcasting Corporation) English or the Queen's English. Estuary English is the increasingly popular British English accent phonetically intermediate between Received Pronunciation English and the regional speech types of London and southeast England. Additional information about such accents can be found in *The Cambridge Encyclopedia of the English Language* (Crystal, 1995).

A panel of native English speakers validated the accent recordings. The three studied accents came from those correctly identified by all validators. Advanced-level nonnative English speakers provided adjectival impressions of the study guise speakers. These impressions were used to devise labels for the 14 semantic differential scales. This procedure ensured that the scale labels were understandable to both native and nonnative English speakers. A practice activity was devised so that respondents would know how to use semantic differential scales.

Distracter guises, accent recordings that are not studied, were incorporated into the study to provide more voice variety for respondents and to reduce the likelihood that they would realize that all three studied accent guises had been recorded by the same phonologist. One phonologist delivered all studied accent guises to eliminate variables associated with such factors as age, voice pitch, speech speed, and emotional reactions to voice qualities. Taped guises eliminated variables associated with such factors as physical appearance, paralinguistics, and physical context. The studied and distracter guises were sequenced randomly. The research materials were pilot tested on multiple continents to ensure that they are defect free and suitable for English speakers around the world.

Respondents were notified about the opportunity to participate, signed informed consent forms, provided demographic information, completed the practice activity, listened to the taped guises, and marked their perceptions on semantic differential scales. Fourteen semantic differential scales were provided for each of the three studied and two distracter guises. Each of the scales had seven positions that reflected the continuum between directly opposite attributes associated with the speaker's accent (e.g., 1 = extremely boring to 7 = extremely interesting). Respondents circled one number on each of the 14 scales for each of the accent guises.

The standardized item alpha was .90, which suggests high reliability in the responses. SPSS for Windows Release 9.0.1 was also used to calculate other statistics as well, including arithmetic and grand means, standard deviations, ranking order, and multiple one-way ANOVAs with related Tukey (honestly significant difference) tests where appropriate. Semantic differential scale data for the three studied accents were arrayed to reveal patterns.

The purposive sample was drawn from prospective and practicing Argentine providers of business-related language services (e.g., instruction in business and commercial English, translation of business documents in English and Spanish, and interpretation of oral business communications in English and Spanish). They attended three teacher-training colleges in Buenos Aires. A majority of the respondents had no experience in providing business-related language services since their language-related education and training were not yet completed.

When the data were collected, those in preparation to be teachers of English there followed one of three career paths. They could teach in state schools and augment their income either by teaching business or commercial English in private language schools or by providing free-lance English-language translation and interpretation services for businesses. They could teach in private language schools that emphasize business or commercial English and augment their income by providing free-lance English-language translation and interpretation services for businesses. They could work only in businesses, using their business and commercial English, translation, and interpretation skills on a continuing basis. The economic reality of life is that eventually most Argentine English-language teachers will provide language services for domestic and/or foreign businesses (R. Basso, personal communication, September 19, 2001).

Respondent Profile

The typical respondent was a 20-to-24-year-old second-year female education major who was pursuing an English-language teacher-training program. She worked part-time in the service industry. She was fluent for business purposes in both Spanish and English but never spoke with businesspersons who communicated in other languages. Her primary affiliation was with Argentina although she had traveled to other countries. The demographic profile suggests that the respondents are typical of prospective and practicing providers of business-related language services in Argentina (R. Basso, personal communication, September 19, 2001).

Study Findings and Related Discussion

The study findings and related discussion section is divided into two topics.

Information About the Rankings

Table 1 shows how the 93 nonnative English-speaking and 7 unclassified English-speaking respondents ranked the studied indigenous English-language accent guises.

Table 1
Argentine Ranking and Grand Means for the English-Language Accent Guises

Rank	English-language accent guise	Grand means	Standard deviation
1	General American	83.79	12.09
2	Received Pronunciation	69.70	16.73
3	Estuary	48.63	14.65

They ranked the General American English accent guise much higher than the other studied indigenous English-language accent guises. The Received Pronunciation English accent guise scored 83% while the Estuary English accent guise scored 58% of the grand mean of the General American English accent guise.

This ranking order is not surprising since it was predictable that Argentines, especially those who might it some way be associated with business activities, would be drawn to the form of the English language that is both geographically closer and economically more dominant, General American English. Interestingly, the General American English accent guise was rated considerably higher and the Received Pronunciation English accent guise was rated considerably lower by the Argentine respondents than they were rated by English-as-a-foreign-or-second-language students and teachers (Rosewarne, 1985, 1990) and by prospective and practicing businesspersons from around the world (Scott et al., 1997, 1998, 1999, 2001) in all closely related accent studies. It is paradoxical that 69% of the respondents expressed the desire to speak English with a standard British accent while 16% of the respondents expressed the desire to speak English with a standard American accent, 8% of the respondents expressed the desire to speak English with other accents, and 7% of the respondents expressed no accent preference. The relatively low rating for the generally highly acceptable Received Pronunciation English accent guise may reflect an atmosphere in which it would be politically incorrect to rate anything associated with the United Kingdom too highly because of its humiliating defeat of Argentina in a dispute over the Falkland Islands or Islas Malvinas in 1982. As happened in all of the closely related accent studies (Rosewarne, 1985, 1990; Scott et al., 1997, 1998, 1999, 2000), the Estuary English accent guise was rated the lowest of the studied indigenous English-language accent guises. This suggests little or no role for Estuary English outside of the United Kingdom. Overall, the rankings and ratings in all of the closely related accent studies suggest a degree of stability in the perceptions of indigenous English-language accents across cultural groups and countries of residence over more than a decade and a half.

Information About the Perception Differences

Six statistically significant differences at the .05 level were found to be related to demographic characteristics of the respondents. This suggests that demographic characteristics have influenced the perceptions of Argentine respondents more than in any of the closely related accent studies (Rosewarne, 1985, 1990; Scott et al., 1997, 1998, 1999, 2001).

The first statistically significant difference was for the General American English accent guise (F = 5.830, Sig. = .004, and df = 2, 96). The perceptions of respondents who were first-year students were higher to a statistically significant degree than the perceptions of respondents who were second-year and third-year students for the General American English accent guise. This likely reflects the strong influence of popular American culture on youth around the world.

The second statistically significant difference was for the Received Pronunciation English accent guise (F = 8.127, Sig. = .001, df = 2, 94). The perceptions of respondents who were second-year and third-year students were higher to a statistically significant degree than the perceptions of respondents who were first-year students for the Received Pronunciation English accent guise. This likely reflects growing recognition and acceptance of the older international English-language standard, Received Pronunciation English, as youth mature and become more knowledgeable about the English language.

The third statistically significant difference was for the Estuary English accent guise (F = 10.562, Sig. = .000, df = 2, 89). The perceptions of respondents who were third-year students were higher to a statistically significant degree than the perceptions of respondents who were first-year and second-year students for the Estuary English accent guise. This likely reflects older students' recognition of the growing role of Estuary English both in the United Kingdom and in the international youth culture, particularly in popular music, as they mature and become more knowledgeable about the English language.

The fourth statistically significant difference was for the General American English accent guise (F = 3.754, Sig. .027, df = 2, 96). The perceptions of respondents who attended the Instituto Nacional Superior del Profesorado Joaquin V. Gonzales were higher to a statistically significant degree than the perceptions of respondents who attended the Instituto de Lenguas Vivas J. R. Fernandez for the General American English accent guise. Why this difference occurred in comparable prestigious state colleges is not known and warrants future investigation.

The fifth statistically significant difference was for the Received Pronunciation English accent guise (F = 14.094, Sig. .000, df = 2, 94). The perceptions of respondents who attended the Instituto de Lenguas Vivas J. R. Fernandez were higher to a statistically significant degree than the perceptions of respondents who attended the Instituto Nacional Superior del Profesorado Joaquin V. Gonzales and the Asociación Argentina de Cultura Inglesa for the Received Pronunciation English accent guise. This is particularly surprising in the case of the Asociación Argentina de Cultura Inglesa because of its strong and long-established links with the United Kingdom. Why this difference occurred is not known and warrants future investigation.

The sixth statistically significant difference was for the Estuary English accent guise (F = 28.489, Sig. .000, df = 2, 89). The perceptions of respondents who attended the Instituto de Lenguas Vivas J. R. Fernandez and the Asociación Argentina de Cultura Inglesa were higher to a statistically significant degree than the perceptions of respondents who attended the Instituto Nacional Superior del Profesorado Joaquin V. Gonzales for the Estuary English accent guise. In the case of the Asociación Argentina de Cultura Inglesa, this may have been the result of greater awareness of the use of Estuary English in the international youth culture, particularly in popular music. Why this difference occurred is not entirely known and warrants future investigation.

Table 2 shows how the respondents rated the studied indigenous English-language accent guises on the 14 semantic differential scales. While the General American English accent guise was always rated the highest on each of the semantic differential scales, the Estuary English accent guise was always rated the lowest on each of the semantic differential scales. The semantic differential scale ratings for the General American English accent guise were somewhat similar to those for the Received Pronunciation English accent guise but typically about .5 to 1.5 higher on the semantic differential scales. The semantic differential scale ratings for the Estuary English accent guise were typically about 1.5 to 3.0 lower on the semantic differential scales than those for the General American English accent guise. In all of the closely related accent studies (Rosewarne, 1985, 1990; Scott et al., 1997, 1998, 1999, 2001) both the General American English accent guise and the Received Pronunciation English accent guise had ratings on one or more semantic differential scales that tied or exceeded those for the other international standard of the English language. In all of the closely related accent studies (Rosewarne, 1985, 1990; Scott et al., 1997, 1998, 1999, 2001), the Estuary English accent guise was always rated lower than both the General American English accent guise and the Received Pronunciation English accent guise on each of the semantic differential scales.

Study Conclusions and Related Recommendations

The study conclusions and related recommendations section is divided into three topics.

Information About the Rankings

The Argentine respondents ranked the studied indigenous English-language accents in this descending order: first, General American English; second, Received Pronunciation English; and third, Estuary English. This ranking may be useful to businesspersons and to providers of business-related language services in Argentina as they select an English-language accent to facilitate oral business communication there. Business educators and trainers and English-as-a-foreign-or-second-language teachers and trainers may also find this ranking useful as they provide information about perceptions of indigenous English-language accents to their students.

Prospective and practicing businesspersons should understand that indigenous English-language accents are perceived differently in various locations. They should choose an English-language accent that is widely acceptable for business purposes. This study and others suggest that either General American English or Received Pronunciation English would be a prudent accent choice. Likewise, prospective and practicing providers of business-related language services in Argentina should understand that indigenous English-language accents are perceived differently in various locations. They should typically choose the General American English accent since it dominates in the New World and since businesspersons will prefer or require it from providers of business-related language services unless the business involves European or Commonwealth countries, in which case businesspersons may prefer or require the Received Pronunciation English accent.

Business educators and trainers and English-as-a-foreign-or-second-language teachers and trainers should encourage their students to choose either a General American English or a Received Pronunciation English accent since either will serve them well regardless of their career paths and is widely comprehensible

Table 2
Semantic Differential Scale Means

English language[a]	A[b]	B[c]	C[d]	D[e]	E[f]	F[g]	G[h]	H[i]	I[j]	J[k]	K[l]	L[m]	M[n]	N[o]
GenAmer	5.75	5.55	6.09	6.04	6.05	5.96	6.03	5.66	6.53	6.22	6.18	6.35	5.97	5.52
RecPron	4.42	4.36	5.01	5.16	5.50	5.18	5.24	5.10	5.96	4.74	5.29	4.80	4.30	4.40
Estuary	3.01	2.20	3.79	4.42	4.69	4.04	4.39	4.22	3.26	3.04	3.90	3.25	2.46	1.93

Note. [a]GenAmer = General American, RecPron = Received Pronunciation, and Estuary = Estuary. [b]A = Boring/Interesting scale; [c]B = Unattractive/Attractive scale; [d]C = Unfriendly/Friendly scale; [e]D = Impolite/Polite scale; [f]E = Uninformative/Informative scale; [g]F = Incompetent/Competent scale; [h]G = Inexperienced/Experienced scale; [i]H = Unintelligent/ Intelligent scale; [j]I = Difficult to understand/ Easy to understand scale; [k]J = Not well-spoken/Well-spoken scale; [l]K = Not precise/Precise scale; [m]L = Bad English/Good English scale; [n]M = Bad intonation/Good intonation scale; [o]N = Unpleasant voice/A pleasant voice scale.

and acceptable throughout the world. They should encourage those who have learned other English-language accents to gradually alter them in the direction of one of these two international standards of the English language. They should serve as effective role models for their students by speaking an accent that is close to one of these dominant standards of the English language. Whenever feasible, they should expose their students to a wide variety of English-language accents to improve their receptive skills while focusing primary attention on one of the two international standards of the English language.

Information About the Perception Differences

Six statistically significant differences were found to be related to demographic differences within the Argentine respondents. This may suggest that Argentine Spanish speakers perceive indigenous English-language accents differently than do those with other linguistic and cultural backgrounds. Since only half of the statistically significant differences could plausibly be explained, there may be things to be learned about how demographic differences within the Argentine respondents affect their perceptions of English-language accents, assuming that the reported apparent differences are in fact actual and not ephemeral or spurious. Since the data were gathered less than two weeks after September 11, 2001, it is possible that such factors as sympathy toward the United States, economic support from the United States in difficult financial times, and the discovery of a terrorist cell in Paraguay along with the prospect of increasing international uncertainty may have boosted respondents' favorable reactions to the General American English accent guise (R. Basso, personal communication, September 19, 2001). It would be prudent to replicate this study in Argentina to confirm the reported statistically significant demographic differences before reading too much into them.

The Argentine respondents rated the studied indigenous English-language accent guises individualistically on all of the 14 semantic differential scales. This information may be useful to businesspersons and to providers of business-related language services in Argentina as they use oral media to communicate with current and future customers. It may be useful to business educators and trainers as they teach about communication and marketing. It may also be useful to English-as-a-foreign-or-second-language teachers and trainers as they discuss how indigenous English-language accents are perceived in Argentina.

Information About Needed Research

Only a small number of studies have addressed perceptions of English-language accents in business-related contexts; consequently, additional research is needed to fill the voids in the business and linguistic literatures. This study should be replicated within the next five to ten years to monitor changes in perceptions of indigenous English-language accents. If the sampling occurred in the same location, then the newer and older results could be compared and contrasted, yielding a longitudinal study to understand better the changes in perceptions of indigenous English-language accents over time. An effort should be made to find out the reasons why all of the reported apparent statistically significant differences exist when the study is replicated. This same study could be conducted in other Central and South American countries, yielding valuable cross-cultural perspectives. It could also be conducted in other trading regions, yielding valuable trading-region perspectives.

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Students' Perceptions of Cyber-Cheating

Ronald F. Fulkert
Konnie G. Kustron
Eastern Michigan University

Abstract

This study identifies the relationship between student perceptions of online plagiarism and the reality of online cheating. The researchers used a self-designed questionnaire to survey business students. Two universities were involved in the project: one is a minority university in the Southeast and the other is a culturally diverse university in the Midwest. The participants' responses were compared to the results of a previous national study of college students' perceptions of online plagiarism. Final data suggested lower amounts of Internet cheating than other research has reported.

Introduction

Educators at all levels have dealt with questions of integrity and honesty in the classroom for many years. In fact, Buranen (1999) acknowledged that the problem goes back to the 19th century when written paper assignments were added as a mainstay in American education and canned topics were often used in the process. Therefore, it was not surprising that in 1963 William Bowers chose to research academic integrity, which resulted in his prominent study on student cheating. His survey of over 5,000 students at 99 schools found that, "63% of students reported that they had cheated at least once" (Bowers, 1964, p. 47). This degree of academic dishonesty continued throughout the 1990's. McCabe reported that "on most campuses, over 75% of students admit to some cheating" (Center for Academic Integrity, 2002, p. 1).

The integration of technology in everyday living adds an element of concern to the already disquieting numbers of students admitting to cheating. High tech cheating, often referred to as cyber plagiarism, is the new challenge to academicians. It not only includes computers and the Internet, but hand-held computers, cell phones, digital watches, electronic calculators, pagers, beepers, and small digital cameras (Lathrop & Foss, 2000).

Why does online cheating happen? McCabe stated, "Students develop the attitude that anything they find on the Internet is public domain, and students who plagiarize from the Internet think in their own minds that it's not plagiarism" (Innerst, 1998, p. A2). The authors' personal experiences are similar to those described by McCabe resulting in this study to investigate the relationship between student perceptions of online plagiarism and the reality of online cheating. This study was precipitated by an occurrence of Internet plagiarism the authors discovered in student papers. During the grading of student research papers from an online course, 5 of 14 student papers were found to have been substantially plagiarized from Internet web sites.

Review of Literature

There is an abundance of research on academic integrity (Singhal, 1982; Hanines, Diekhoff, LaBeff, & Clark, 1986; Stern & Havlicek, 1986; McCabe & Trevino, 1993, 1997). These studies and authors such as Cizek (1999) and Whitley & Keith-Spiegel (2002) suggest that cheating is "chronic." McCabe reported "in a 1999 survey of 2,100 students on 21 campuses across the country, about one-third of the participating students admitted to serious test cheating and half admitted to one or more instances of serious cheating on written assignments" (p. 1). Also in 1999, the Center for Academic Integrity indicated "that 69% of professors catch one or more instances of plagiarism each year" (Young, 2001, p. A26). And the numbers are growing. The University of California at Davis reported 70 cases of plagiarism in 1994-1995 and 142 cases during the 1999-2000 academic year (Young, 2001).

The Digital Age makes plagiarizing easy (Carnevale, 1999; Lathrop & Foss, 2000; McMurtry, 2001; Phillips & Horton, 2000; Plowman, 2000; Renard, 2000; Young, 2001). Online classes are especially vulnerable to cyber cheaters (Carnevale, 1999). Not only do students copy material from original sources, but paper mills such as www.SchoolSucks.com, Eassayworld.com, and 15000Papers.com provide students with assignment-specific downloads (Gardiner, 2001; McMurtry, 2001). Hafner (2001) reported that 10% to 20% of college students acknowledged online cheating. In a study published this year, Scanlon and Neumann from the Rochester Institute of Technology surveyed 698 undergraduates at nine universities about online plagiarism. The researchers found that 24.5% of college students reported acts of plagiarism using the Internet. Specifically, 16.5 % indicated cutting and pasting text without citing the information properly; however, only 8% admitted to doing so often or very frequently. Interestingly, 50.4% believed "that their peers 'often' or 'very frequently' cut and pasted text from the Internet into their papers without proper citation" (Kellogg, 2002, A44).

This research suggests that the numbers are lower than "traditional" cheating and that perhaps the open use of technology has not added to the epidemic in student dishonesty. However, Johns and Strand's (2000) research indicated no difference in the level of students' unethical behavior since the widespread availability of the Internet. They duplicated a study originally conducted in 1976 assessing the ethical decisions and behaviors of business students. Much of the literature that discusses cyber plagiarism focuses on strategies to minimize high tech cheating (Renard, 2000) and discusses plagiarism-detection software (Young, 2001) rather than empirical research.

Regardless of the wide-spread use of the Internet and its relationship to unethical behavior, research indicates that university students are cheating. McMurty (2001) found that some students do not believe cheating is "necessarily wrong." A study by Kleiner and Lord (1999) found that 75% of the college students surveyed admitted to cheating at least once during the their college careers, and 95% of these students were never caught. Research into the antecedents of unethical behavior revealed that business "students who are male, tolerant, relativistic, and opportunistic tend to behave less ethically than other students" (Rawwas & Isakson, 2000, p. 321). In Lupton, Chapman, and Weiss's (2000) cross-national research of American and Polish business students' academic dishonesty, American students were found to cheat significantly less than their Polish counterparts. "Nearly 84% of the Polish students reported having cheated ... [they] felt that about 61% of their colleagues cheat on exams" (Lupton, Chapman, & Weiss, 2000, p. 232). These numbers were 55% and 24%, respectively, for the American business students.

To help faculty members catch plagiarists, many universities are now investing in detection software such as Turnitin.com that scans students' papers for copied material (Campbell, Swift, Denton & Mello, 2000). Additionally, a professor at the University of Virginia created a program that is available free on the Web (http://plagiarism.phys.virginia.edu). The software packages vary, but often they are able to check for content from the Web as well as articles from electronic databases such as ERIC and ABI Inform (Young, 2001). Furthermore, other research (Caruana, Ramaseshan, & Ewing, 2000) suggests that institutionalized codes of ethics at the university level may reduce students' use of plagiarism and unethical behavior.

Purpose

The primary purpose of this study was to investigate business students' perceptions of online plagiarism at two comprehensive state-supported universities.

Hypotheses

This study was based on the following hypotheses:

H1: Cheating occurs at the college level at a rate greater than 25%.

H2: Students plagiarize at each class rank.

H3: Males and females differ in their frequency of plagiarism.

H4: The two populations differ in their frequency of plagiarism.

H5: There is a difference between students' perception of plagiarism using the Internet versus traditional paper sources.

Research Procedures

Instrumentation

Based on prior research, the researchers developed the survey instrument, which consists of 35 selected responses. The survey questions concern the students' demographics and their perceptions and behaviors in relationship to online plagiarism. The instrument and the study were approved by the appropriate university human subject review committees at both universities prior to distribution of the pilot study.

The pilot study took place in Fall 2001 with 102 students from one of the institutions participating in the study. Pilot participants – evaluators – were not members of the population and did not take part in the final study. The evaluators were requested to assess the student consent and information sheet, the directions, and the questions for ethics and plagiarism. A response rate of 85% was received for the pilot study. Most respondents provided positive feedback about the readability and clarity of the information sheet, directions, and questions. The pilot evaluators provided several minor suggestions. Upon completion of the pilot survey, there were slight mechanical and typographical adjustments to refine the instrument to ensure clarity and understanding. After the data from the pilot were tabulated and synthesized, the instrument was judged to be satisfactory and appropriate for the design of the study.

Population

The population included two subgroups: the Midwest university business students and the Southeast university business students. The Midwest learners included all 242 business education and technology students who were enrolled in classes during the Winter 2002 semester. Major areas included both teaching and non-teaching majors such as marketing education, business education, technology and design education, industrial-vocational education, network and information technology education, legal assistant (paralegal) studies, and administrative management. The Southeast students included all of the 1,269 business undergraduates enrolled in the Spring 2002 semester (comparable to the Midwest winter). Majors included economics, transportation and logistics, finance, accounting, administrative systems, management, marketing, management information systems, and business education.

Collection of Data

In the Midwest, the consent forms and instruments were mailed to the 242 business majors at their university address of record. Surveys were returned by 71 students; an additional 14 students returned the materials from a follow-up mailing. Slightly different data collection procedures were used at the Southeast university. Survey instruments were distributed in business classes until a target number of responses (250) were collected. Students were advised that their participation was strictly voluntary; they were also instructed not to complete the survey if they had been asked to do so in a prior class.

All students voluntarily participated in the project and were not compensated for their participation. In both methodologies of collecting data, the students remained anonymous. The students were informed that if they chose not to participate, the information provided would not have any bearing on their class grades.

Discussion

Demographic Information

In regard to class rank, 14% (n=46) were freshman, 29% (n=100) were sophomores, 30% (n=103) were juniors; and 26% (n=29) were of senior ranking. The gender mix reflected more women than men: 62% (n=210) female and 38% (n=128) male. Ethnic background and religious affiliation are described in Tables 1 and 2 below.

Table 1
Ethnic Background

Southeast University			Midwest University		
Type	**No.**	**%**	**Type**	**No**	**%**
Black	244	96	Black	10	12
Caucasian	4	1	Caucasian	67	79
Asian/PI	4	1	Asian/PI	1	1
Native Am	0	0	Native Am	1	1
Hispanic/Chic	0	0	Hispanic/Chic	3	3
Other	2	1	Other	3	3

Note: Numbers may not equal 100% due to rounding.

Table 2
Religious Affiliation

Southeast University			Midwest University		
Type	**No.**	**%**	**Type**	**No**	**%**
Christian	226	89	Christian	65	76
Jewish	0	0	Jewish	4	4
Muslim	2	1	Muslim	0	0
Buddhist	4	1	Buddhist	16	19
Other	22	9	Other	0	0

Note: Numbers may not equal 100% due to rounding

Even though there was a choice for students to identify themselves as International students, none chose that category.

Hypotheses Discussion

The hypotheses were tested to determine whether students were plagiarizing from the Internet. SPSS version 9.0 was used to analyze the data. The survey questions were originally worded for nominal data responses; however, during analysis the questions were grouped so that interval data could be used to create indexes for comparison. An expert panel evaluated how the questions could be grouped to evaluate like data. The results of the panel suggested four groups: (a) an action of self, (b) action of others, (c) belief of self, and (d) knowledge of self. The results from the first group "action about self" suggested agreement with two of the five hypotheses.

Table 3
Questions

Action about self	7, 9, 11, 15, 17, 21, 25, 26, 29
Action about others	6, 8, 10, 16, 18, 24
Belief about self	12
Knowledge about self	13, 14, 26, 32

Hypothesis One

The first hypothesis stated cheating occurs at the college level at a rate greater than 25%. In Kellogg (2002) Scanlon and Neumann suggested that a national average of approximately 25% of university students report Internet cheating. The respondents at the Midwest and Southeast universities indicated Internet cheating at a significantly lower percentage. Approximately 10% of the respondents reported some type of cheating using the Internet.

Table 4
Data Analysis for Hypothesis One

Test Value = 1.75

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H1	100.636	102	.000	14.4539	14.1690	14.7388

Hypothesis Two

Hypothesis two stated that students plagiarize at each class rank. The data did not support this hypothesis. However, there were only two freshmen and eight sophomores from the Midwest university that responded to the questionnaire; therefore, the numbers were too small to statistically evaluate cheating due to class rank. Even after combining the two universities' data, there were insufficient numbers to make any generalizations concerning class rank and Internet cheating.

Hypothesis Three

Hypothesis three stated that differences exist by gender in the frequency of plagiarism. Using the grouping of actions about self and a t-test of independent samples, the results indicate that there is no significant difference between male and female students.

Hypothesis Four

A t-test was used to determine whether there was a difference between the two independent difference between the groups. Interval data and random groups were used; therefore, a t-test for independent samples was necessary to determine whether or not the groups were similar.

Hypothesis Five

There is a difference in student plagiarism between students' perceptions of plagiarism using the Internet versus traditional paper sources. The Center for Academic Integrity citing McCabe indicated that 75% of university students report cheating at some level on written assignments (Center for Academic Integrity, 2002, paragraph 1). The data from this study indicates that university students rreported less cheating than traditional paper sources.

Table 5
Data Analysis for Hypothesis Three

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std Error Difference	Lower	Upper
Grouping-actions about self									
Equal variances assumed	.122	.727	1.726	336	.085	.0263	.01525	-.00367	.05634
Equal variances not assumed			1.739	274.823	.083	.0263	.01514	-.00347	.05614

Table 6
Data Analysis for Hypothesis Four

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std Error Difference	Lower	Upper
Grouping-actions about self									
Equal variances assumed	4.142	.043	-2.106	337	.036	-.0358	.01700	-.06923	-.00236
Equal variances not assumed			-2.459	197.554	.015	-.0358	.01456	-.06450	-.00709

Table 7
Data Analysis for Hypothesis Five

Test Value = 1.75

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H5	104.118	102	.000	14.9539	14.6690	15.2388

Conclusions and Recommendations

Conclusions

The participants of this study reported less evidence of plagiarism than what would be expected based on the review of literature. Compared to the national averages reported by other researchers, business students at the Midwest and Southeast universities studied reported less instances of cheating. Various factors could have influenced the results of this study:

1. The directness of the questions could have been misleading. Each survey question about cheating did not give the respondents an option for the degree of cheating. Students responded either yes or no.

2. Using a Likert-type scale would have been more useful to interpret the data. Nominal data made evaluation of students' responses somewhat challenging.

3. Students' perceptions of anonymity might have influenced their responses at the Midwest university. For example, even though students were informed that the instruction and permission sheet were separated from the survey, the students may have felt their anonymity was at risk.

4. The number of respondents was small in certain areas. For example, the small number of freshman and sophomore respondents from the Midwest university made evaluation and generalization impossible.

5. Respondents of this study were aware that there are Web sites available to detect whether a document has been copied from other copyrighted work. This service is discussed in many of the business education classes at the Midwest university.

6. All of the participating students are business majors and many of them are either pre-law or business education students. Therefore, it could be concluded that individuals interested in law or education may be somewhat more aware of plagiarism and its consequences.

Recommendations

1. Because the business students at the two universities studied are often informed of the faculty's use of Internet plagiarism detection software, such as Turnitin, the students may be less inclined to cheat. Therefore, the researchers recommend that faculty inform students about the existence of these detective devices.

2. We recommend that faculty members who are concerned about plagiarism discuss with their students the issues of papers produced by online paper mills. The fact that the students know the faculty are aware of these sites could reduce the temptation to plagiarize by purchasing a paper or cutting and pasting from the Internet.

3. This study should be replicated on a larger regional and national basis. In addition, future research should determine whether the media coverage of Enron and Arthur Anderson has had any effect on business students' perceptions of cheating.

4. Social-economic status should be determined as a demographic variable in the survey instrument. Social status could perhaps influence the degree of Internet cheating.

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A Survey of Exporting Activities with Implications for International Business Instruction

Les R. Dlabay
Lake Forest College

Abstract

As global business activities expand, exporting activities among small and medium-sized enterprises (SME) increase. However, many firms avoid internationalization due to limited resources, uncertainty of foreign markets, unaware of exporting process, and financing and shipping procedures. To identify common barriers and information sources used by companies involved in exporting, an assessment of activities and attitudes of company representatives from various business organizations was conducted. Survey results offered guidelines for course topics and techniques for international business education instruction.

Introduction

"The exporting literature suggests that firms with limited international experience often perceive exporting to be riskier that those further along the internationalization path. Therefore, one way firms attempt to reduce risk in foreign markets is by internationalizing after a period of domestic maturation" (Yeoh, 2000).

As global business activities expand to involve all types of industries and all sizes of business, exporting activities among small and medium-sized enterprises (SME) increase. Pope (2002) reports that higher profits, a unique product, technological advantage, and special knowledge are the main reasons for exporting among organizations with 25 or fewer employees. Common reasons given for not exporting include limited resources, uncertainty of foreign markets, unaware of exporting process, and financing and shipping procedures (Ryan, 1998).

Research Objectives

This study was designed to:

1. identify characteristics related to common barriers and information sources used by companies involved in exporting.
2. determine the activities and attitudes of companies involved in exporting related to technology and information sources.
3. recommend topics and techniques for international business education based on an analysis of attitudes and activities of companies involved in exporting.

Research Methods

This study used a survey to identify various activities and attitudes of exporters regarding trade barriers, export assistance information sources, and influences of technology.

Survey Instrument Development

The survey instrument for this study was developed using the following steps:

1. A review of recent articles provided the foundation to identify key issues related to exporting activities and information sources.
2. The author attended more than 60 exporting and international business workshops and seminars during the three previous years.
3. Interviews were conducted with individuals representing small and medium-sized enterprises to help focus the key issues of the survey.
4. Field testing of a preliminary questionnaire was conducted to refine and clarify the phrasing of the survey items.

Sampling Procedures

A convenience sample was used consisting of company representatives from the membership lists of the following international trade organizations:

- International Trade Association of Greater Chicago
- Milwaukee World Trade Association
- North Shore Exporters (of Illinois)
- Wisconsin World Trade Center

Survey Administration

The survey instrument was distributed in-person (at workshops and seminars) and by fax to 160 individuals representing companies that are a member of one of the above international trade organizations.

Survey Results

Responses were received from 54 Illinois companies (60 percent response rate) and 24 Wisconsin companies (34.3 percent response rate). The data resulted in the following conclusions:

Exporting Activities

Participants in this study represented mainly manufacturing enterprises with some respondents from health care, financial services, and technology organizations.

Type of business	Manufacturing	Services, financial	Retailing	Technology
Number in study	47	21	5	2

Company size ranged from organizations with 1-10 employees to those with more than 50 employees. The participants represented companies with sales outside of the United States ranging from zero to over 90 percent of the organization's revenue:

Percentage of Organization's International Sales

0	1-10%	11-15%	25-50%	Over 50%
1	18	12	21	15

Responses regarding the initial contacts for exporting and international trade activities included the following:

Sources of Initial Contacts for International Business	n
Distributors, strategic partners	18
Trade shows, trade associations	16
Personal contacts	13
Advertisements in trade journals, international publications	6
Business directories	4
Foreign solicitation	2
Web site contacts	2
Company subsidiaries	2
Foreign customer solicitation	2
Government agencies	1
Exporting department	1

Trade Barriers

Participants in the study indicted that culture, language, financial issues, regulatory differences, shipping logistics, and limited information are the main barriers faced by small business when doing business outside of the United States. The frequency of trade barriers mentioned:

Common Barriers Faced by Business when Exporting	n
Cultural, language, communication differences	19
Customer financing, payment collection, credit risk	18
Costs, pricing, tariffs, exchange rate	15
Foreign regulations, documentation, customs	11
Shipping time, procedures, logistics	9
Unaware of exporting process; lack of information	7
Domestic (local) competition	7
Lack of market presence, local contacts	7
Political, economic environment	4
Locating distributors	3
Lack of local customer support	2
Global company competition	2

Attitudes of Exporting Company Representatives

Participants tended to express strong agreement regarding the issues assessed in this study. Respondents indicated favorable responses regarding the potential of information technology for international trade activities.

Technology and the Internet are making international trade and exporting easier for companies such as ours.	n	SA (5)	A (4)	N (3)	D (2)	SD (1)	*X*
	73	21	36	11	4	1	3.99

Strongest agreement was received for the continued growth of international sales for the organizations in this study. This result reflects the global emphasis of the participants. While the survey was conducted before September 11, 2001, global business is likely to maintain a significant emphasis for most companies that desire market expansion and revenue growth.

In the next two years, international trade and exporting will be more important to our company.	n	SA (5)	A (4)	N (3)	D (2)	SD (1)	*X*
	73	20	49	2	1	1	4.18

Slightly less agreement was received regarding the assistance provided from state exporting agencies. Comments from respondents indicated that some companies were not aware of or were not satisfied with the services received from various state agencies.

State agencies provide useful assistance for companies involved in international trade and exporting.	n	SA (5)	A (4)	N (3)	D (2)	SD (1)	*X*
	72	7	36	24	3	2	3.60

Despite size and resource limitations, most respondents recognize the potential for smaller organizations in the global marketplace. Competitive advantages can result from personal contacts, targeted customer service, and shorter response times.

Small businesses have comparable potential for successful international trade and exporting as large companies.	n	SA (5)	A (4)	N (3)	D (2)	SD (1)	*X*
	69	12	33	13	10	1	3.65

Export Information Sources

The most commonly reported export information sources were federal and state government agencies; also mentioned were local and regional trade associations.

Implications for Business Educators

The results of this study emphasize various resources, course topics, and instructional strategies related to international business.

Instructional Resources

1. A variety of state and federal government agencies, as well as trade associations, provide information and assistance related to exporting and international business activities. These organizations offer publications, online information and assistance, and resource people who can serve as class speakers or contacts for student projects.
2. Web sites offer students and teachers current information on country data, culture, economic conditions, political trends, and other topics affecting exporting and international trade activities. Some of the most helpful are included in the table below.
3. In-class presentations by representatives (or visits to organizations) provide an interactive experience for obtaining information on specific company examples and country situations.

County information	**Federal government**	**Business periodicals**
·www.economist.com/countries ·www.cia.gov/cia/publications/factbook ·www.state.gov/r/pa/bgn ·reenic.utexes.edu	·www.usatrade.gov ·www.export.gov ·www.sba.gov ·www.fas.usda.gov· ·www.census.gov/foreign-trade	·www.latintrade.com ·www.feer.com ·www.africaguide.com ·www.economist.com ·www.ft.com
State export offices	**International portals**	**Global finance**
·www.commerce.state.wi.us ·www.commerce.state.il.us ·www.tded.state.tx.us/trade ·www.georgia.org/trade/index.html	·globaledge.msu.edu/ibrd/ibrd.asp ·www.fita.org·www.imf.org ·www.internationalist.com/business ·www.etown.edu/vl	·www.worldbank.org ·www.imf.org ·www.xe.net/ucc ·www.oanda.com

Course Topics

1. Awareness of global market environments in terms of economic, cultural, and political factors is vital for exporting success. The exporting barriers identified in this study can provide a foundation for lectures, speakers, research exercises, and case analysis assignments.

2. This study, along with others, underscores the use of strategic partnerships (joint ventures, dealer agreements, licensing) to improve success of international trade activities.

3. The ability to adapt product, pricing, promotion, and distribution strategies in foreign markets is fundamental to planning an exporting strategy.

Instructional Strategies

1. Students should be encouraged to analyze the market potential of other countries in terms of geographic, economic, cultural, and political factors, including the following:

Geographic factors—location, climate, terrain, waterways, agriculture, natural resources
Economic factors—physical infrastructure, economic development, exchange rate, inflation
Social-cultural factors—traditions, language, family relationships, education, religion, customs
Political-legal factors—political stability, corruption, regulations, tariffs, tax system

2. Students should assess information sources relevant to planning and implementing exporting activities. Using a combination of library materials, web resources, and field research (surveys, interviews, and observations), course assignments and team projects should address the following elements of exporting:

   - Identify international business opportunities for small and medium-sized companies that desire to enter or expand in foreign markets.
   - Assess geographic, economic, social-cultural, and political-legal factors that create foreign business opportunities and that may affect the business environment of foreign markets.
   - Develop a mission statement and strategic alliances for planning and implementing global business activities.
   - Develop a product concept, including sensory and perceptual dimensions, for an appropriate foreign market.
   - Conduct marketing research to identify appropriate market segments.
   - Plan funding sources and cash flow analysis based on pricing strategies.
   - Plan human resource needs including identifying, recruiting, and selecting needed personnel.
   - Create a distribution and promotional strategy that adapts to the economic, social-cultural, political-legal environment of the country.
   - Plan for implementation of a time line and assigned responsibilities for the various elements of the business plan.
   - Measure success, including assessing economic and social benefits and costs for the business and host country

3. Students should interview business people and others with international experiences; some suggested sources and interview questions include:

Suggested resource people for interviews

- Individuals who have lived in or visited other countries
- Individuals who have researched other countries
- Businesspeople who have served in other countries
- Representatives of global companies
- Representatives of foreign trade offices and consulates

Suggested interview questions

1. What current economic and political developments are influencing international trade activities?
2. How do cultural and social factors affect the business environment?
3. What types of business enterprises provide the strongest opportunities?
4. What actions would best contribute to economic development and quality of life?

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PART II

REFEREED INNOVATIVE INSTRUCTIONAL PRACTICES PAPERS

Developing a WebQuest

Margaret J. Erthal
Illinois State University

Abstract

The advantages and disadvantages of using the Internet as a vehicle for learning has been debated for some time. It is not uncommon for students to be more cognizant of Internet resources than their teachers. However, merely "surfing the Web" without direction and structure becomes a questionable activity. This session will share information related to developing a WebQuest, which is an inquiry-oriented activity. Some or all of the information used by learners is drawn from the Internet. WebQuests are designed to use learners' time well, to focus on using information, and to support learners' thinking at the levels of analysis, synthesis and evaluation.

Introduction

The WebQuest model was developed by Bernie Dodge with Tom March from San Diego State University in 1995. The WebQuest appeals to both students and teachers because it provides structure and guidance (Dodge, 2002a). In addition, a well-designed WebQuest requires learners to apply critical-thinking skills and work in a real-world, cooperative learning environment. The goal of a short-term WebQuest is knowledge acquisition and integration and should be completed within a week. The goal of a long-term WebQuest is to extend and refine knowledge and may continue for up to a month.

Five rules for writing great WebQuests create the acronym **FOCUS**: Find great sites, Orchestrate your learners and resources, Challenge your learns to think, Use the medium, and Scaffold high expectations (Dodge, 2002a). Probably challenging learners to think and scaffolding high expectations should be ranked first and second. If the WebQuest is to become more than a time-consuming activity, it must be well designed, implemented, and evaluated.

Objectives

At the end of this session the learner will be able to: describe the six components of a WebQuest, create learning objectives for a WebQuest, locate Internet based resources, and design a rubric for evaluation purposes.

Literature Review

The literature review consists of describing the WebQuest and component parts. In the literature search there were only accolades for the WebQuest. Students are motivated to explore the World Wide Web for their own interests. However, using the web in a classroom environment has not met with much success (Perrone, Clark & Repenning, 2002). What is needed is a structured mechanism that focuses on learning specific domains. Otherwise, the World Wide Web becomes similar to having 500 TV channels. The WebQuest can increase the viability of the Internet as a serious learning resource and become an alternative to traditional instructional delivery methods. The critical attributes of a WebQuest require six components. Introduction, task, process, evaluation, and conclusion. (Dodge, 2002a). Schrock (2002) introduces another step, guidance and combines it with evaluation in order to further measure results.

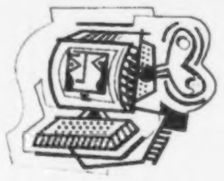
Introduction Section

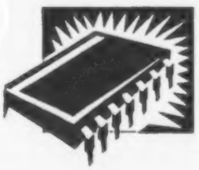
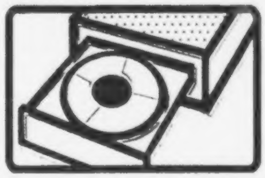
The purpose of the introduction section is to prepare and hook the reader. The following text and graphics are the introduction section of an actual WebQuest that was used in a beginning collegiate-level computer applications class.

Welcome To Your Computer WebQuest!

A WebQuest is an inquiry-oriented activity that uses the Internet to locate answers to questions and allow you to delve deeper into a subject that interests you. This WebQuest focuses on computers and will cover how a computer works, computer input and output devices, computer hardware and software, how computers have changed society, and privacy issues.

Each section begins with a question or a task for you to complete. Sometimes you will work within a group and sometimes you will work by yourself. Computers are here to stay and no matter what your career goal, knowledge of computers and expertise with computers is essential. So, sit back and get ready for your Computer WebQuest.

How Do Computers Work	**The History of the Microprocessor**	**Computer Input and Output Devices**
		

Computer Architecture and Components	**Storage Devices and Medium**	**Security, Fraud and Society**
		

These two on-line dictionaries can define any unfamiliar term. Webopedia and Night Flight.

Task Section

The task focuses learners on what learners are going to do; specifically, the culminating performance or product that drives all of the learning activities. The task is the single most important part of a WebQuest (Dodge, 2002b) and provides guidance and focus for students. A well designed task is doable and engaging, and elicits thinking in learners that goes beyond rote comprehension. There are a variety of tasks that the learner can perform. Possible tasks include: (1) retelling tasks, in which the learner goes beyond reporting simple and pre-determined answers, (2) compilation tasks, which familiarizes students with a body of knowledge, (3) mystery tasks, which require synthesis of information from a variety of sources, (4) journalist tasks, which requires the learner to assume the role of a newspaper, radio, or television reporter, (5) design tasks, which requires students to develop an authentic product to solve a problem, (6) creative tasks, which lead to the production of something within a given format, such as a painting, skit, song, etc., (7) consensus building tasks, asks learners to take on different perspectives to a problem or issue, (8) persuasion tasks require students to convince an audience of a particular point of view, (9) analytical tasks ask learners to look at relationships and determine cause and effect, (10) judgment tasks asks learners to rank a number of items based on a limited number of choices, and (11) scientific tasks which include making and testing hypotheses (Dodge, 2002b).

The following text and graphics are the task section of an actual WebQuest that was used in a beginning collegiate-level computer applications class.

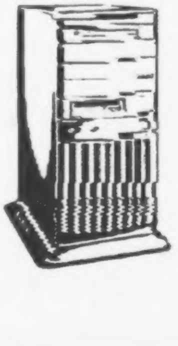
Computer Architecture and Components

You can't see what goes on inside a computer. Data travels along circuits and paths faster than the blink of an eye. Speed is measured in nanoseconds and computers don't even understand English. Computers understand numbers, and they only use two numbers 0 and 1 (called the binary numbering system) to respond to your every request—from typing a letter to sorting names and addresses.

Use these links to complete the activities:

Computer Architecture
Computer Components
The Motherboard
Keep the Cache

Activity 1: List three characteristics of the monitor, speakers, keyboard, mouse, and tower. What specific task does each component perform? Prepare your answers and email to your instructor.



Activity 2: Which peripheral device uses a parallel port, a serial port, a SCSI port, a MIDI port, a USB port, and a firewire port? Explain the differences among the various ports, the advantages and disadvantages, create a table that lists the peripheral device and the port(s), email to your instructor.

Activity 3: Compare and contrast the various memory types (RAM, ROM, and Virtual Memory). Under what circumstances do you use each memory type? Write a one-page paper describing your findings and email to your instructor.

Activity 4: Computers cost anywhere from $500 to more than $2000. What makes the difference? (look at performance measures, capacity, cards, etc.) Obtain advertisements for three computers from your local newspaper and explain each item that is listed. In groups of three create a graphic presentation that details your findings and be prepared to share with the class.

Return to 🏠 (Welcome To Your Computer WebQuest)

Process Section

The process section outlines how the learners will accomplish the task and includes steps, resources, and tools for organizing information. In the above example, the activities represent the process component of a WebQuest.

Evaluation Section

The evaluation section describes the criteria needed to meet performance and content standards. Within the activity sections, the output is identified, such as list, describe, compare and contrast, and explain.

Conclusion Section

The conclusion section brings closure and encourages reflection. The intention is to encourage learners to delve deeper into a topic, share knowledge with their peers, or to extend the learning into related areas beyond this lesson.

WebQuest Rubric

The rubric for a WebQuest is divided into sections in order to judge the effectiveness (Dodge, 2002c).

- Overall Aesthetics: visual appeal, navigation and flow, and mechanical aspects.
- Introduction: motivational effectiveness and cognitive effectiveness.
- Task: connection to standards and cognitive level of the task.
- Process: clarity, scaffolding, and richness.
- Resources: relevance and quantity of resources.
- Evaluation: clarity of criteria.

Appendix A includes a complete rubric for evaluating WebQuests.

Implications for Practice

The possibilities for a WebQuest extend well beyond the K-12 classroom as it can be used at the community college and university levels. As the teacher develops curriculum, a process occurs that includes writing objectives, searching for activities, projects and materials to meet those objectives and evaluation to determine effectiveness and learning. A WebQuest supplies the activities, projects and materials of the normal curriculum design. For instance, a consumer education class WebQuest could be structured to create a discussion on the role of government in consumer protection. A methods class WebQuest could focus on persuading the Board of Education to include keyboarding at the elementary level.

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Appendix A

A Rubric for Evaluating WebQuests

The WebQuest format can be applied to a variety of teaching situations. If you take advantage of all the possibilities inherent in the format, your students will have a rich and powerful experience. This rubric will help you pinpoint the ways in which your WebQuest isn't doing everything it could do.

	Beginning	**Developing**	**Accomplished**	**Score**
Overall Aesthetics (This refers to the WebQuest page itself, not the external resources linked to it.)				
Overall Visual Appeal	*0 points* There are few or no graphic elements. No variation in layout or typography. OR Color is garish and/or typographic variations are overused and legibility suffers. Background interferes with the readability.	*2 points* Graphic elements sometimes, but not always, contribute to the understanding of concepts, ideas and relationships. There is some variation in type size, color, and layout.	*4 points* Appropriate and thematic graphic elements are used to make visual connections that contribute to the understanding of concepts, ideas and relationships. Differences in type size and/or color are used well and consistently.	
Navigation & Flow	*0 points* Getting through the lesson is confusing and unconventional. Pages can't be found easily and/or the way back isn't clear.	*2 points* There are a few places where the learner can get lost and not know where to go next.	*4 points* Navigation is seamless. It is always clear to the learner what all the pieces are and how to get to them.	
Mechanical Aspects	*0 points* There are more than 5 broken links, misplaced or missing images, badly sized tables, misspellings and/or grammatical errors.	*1 point* There are some broken links, misplaced or missing images, badly sized tables, misspellings and/or grammatical errors.	*2 points* No mechanical problems noted.	

Introduction				
Motivational Effectiveness of Introduction	*0 points* The introduction is purely factual, with no appeal to relevance or social importance OR The scenario posed is transparently bogus and doesn't respect the media literacy of today's learners.	*1 point* The introduction relates somewhat to the learner's interests and/or describes a compelling question or problem.	*2 points* The introduction draws the reader into the lesson by relating to the learner's interests or goals and/or engagingly describing a compelling question or problem.	
Cognitive Effectiveness of the Introduction	*0 points* The introduction doesn't prepare the reader for what is to come, or build on what the learner already knows.	*1 point* The introduction makes some reference to learner's prior knowledge and previews to some extent what the lesson is about.	*2 points* The introduction builds on learner's prior knowledge and effectively prepares the learner by foreshadowing what the lesson is about.	
Task (The task is the end result of student efforts... not the steps involved in getting there.)				
Connection of Task to Standards	*0 points* The task is not related to standards.	*2 points* The task is referenced to standards but is not clearly connected to what students must know and be able to do to achieve proficiency of those standards.	*4 points* The task is referenced to standards and is clearly connected to what students must know and be able to do to achieve proficiency of those standards.	
Cognitive Level of the Task	*0 points* Task requires simply comprehending or retelling of information found on web pages and answering factual questions.	*3 points* Task is doable but is limited in its significance to students' lives. The task requires analysis of information and/or putting together information from several sources.	*6 points* Task is doable and engaging, and elicits thinking that goes beyond rote comprehension. The task requires synthesis of multiple sources of information, and/or taking a position, and/or going beyond the data given and making a generalization or creative product.	

Process (The process is the step-by-step description of how students will accomplish the task.)				
Clarity of Process	*0 points* Process is not clearly stated. Students would not know exactly what they were supposed to do just from reading this.	*2 points* Some directions are given, but there is missing information. Students might be confused.	*4 points* Every step is clearly stated. Most students would know exactly where they are at each step of the process and know what to do next.	
Scaffolding of Process	*0 points* The process lacks strategies and organizational tools needed for students to gain the knowledge needed to complete the task. Activities are of little significance to one another and/or to the accomplishment of the task.	*3 points* Strategies and organizational tools embedded in the process are insufficient to ensure that all students will gain the knowledge needed to complete the task. Some of the activities do not relate specifically to the accomplishment of the task.	*6 points* The process provides students coming in at different entry levels with strategies and organizational tools to access and gain the knowledge needed to complete the task. Activities are clearly related and designed to take the students from basic knowledge to higher level thinking. Checks for understanding are built in to assess whether students are getting it.	
Richness of Process	*0 points* Few steps, no separate roles assigned.	*1 points* Some separate tasks or roles assigned. More complex activities required.	*2 points* Different roles are assigned to help students understand different perspectives and/or share responsibility in accomplishing the task.	

Resources (Note: you should evaluate all resources linked to the page, even if they are in sections other than the Process block. Also note that books, video and other off-line resources can and should be used where appropriate.)				
Relevance & Quantity of Resources	*0 points* Resources provided are not sufficient for students to accomplish the task. OR There are too many resources for learners to look at in a reasonable time.	*2 points* There is some connection between the resources and the information needed for students to accomplish the task. Some resources don't add anything new.	*4 points* There is a clear and meaningful connection between all the resources and the information needed for students to accomplish the task. Every resource carries its weight.	
Quality of Resources	*0 points* Links are mundane. They lead to information that could be found in a classroom encyclopedia.	*2 points* Some links carry information not ordinarily found in a classroom.	*4 points* Links make excellent use of the Web's timeliness and colorfulness. Varied resources provide enough meaningful information for students to think deeply.	
Evaluation				
Clarity of Evaluation Criteria	*0 points* Criteria for success are not described.	*3 points* Criteria for success are at least partially described.	*6 points* Criteria for success are clearly stated in the form of a rubric. Criteria include qualitative as well as quantitative descriptors. The evaluation instrument clearly measures what students must know and be able to do to accomplish the task.	
Total Score				/50

Original WebQuest rubric by Bernie Dodge. This is Version 1.03. Modified by Laura Bellofatto, Nick Bohl, Mike Casey, Marsha Krill, and Bernie Dodge and last updated on June 19, 2001.

Enhancing Education/Workplace Instructional Methods

Carol Blaszczynski
California State University, Los Angeles

Diana J. Green
Weber State University

Abstract

What can deliverers of instruction in the workplace and in educational settings do to enhance the quality of instruction to learners? This article describes active instructional strategies that can be used in educational and workplace learning settings. Included among those strategies are line dancing as a vehicle for teaching skill building and role playing as a vehicle for teaching decision making.

Introduction

Higher education methodologists have touted active learning methods during the last decade. Many instructors have incorporated PowerPoint presentations as a vehicle for instructional delivery. However, some students and trainees are expressing boredom with that particular instructional delivery method. What can deliverers of instruction in the workplace and in educational settings do to enhance the quality of instruction to learners?

Purpose

Active instructional strategies can be used in educational and workplace learning settings to stimulate student interest, provide variety, and enhance learning. The methods outlined in this article include line dancing as a vehicle for teaching skill building and role-playing as a vehicle for teaching decision making.

Literature Review

McCain (1999) defined instructional strategies as "the methodology used to help participants become involved and learn" (p. 14). Instructional strategies selected should "align with the content being presented and enhance the learning process" (McCain, 1999, p. 14). Thus, instructional strategies should be used to reinforce content in addition to allowing application to an actual job situation.

Klatt (1999) underscored the importance of active participation in learning:

> For learning to occur, adults have to do things. They must get involved and work at tasks and exercises. Adults need to learn by doing and making mistakes. They need to discover solutions on their own. It's not enough to have adults just read, listen, or watch a film. (p. 69)

Klatt (1999) described experiential learning as learning by doing—"learning by being involved, by struggling, by experimenting, by trying, by discovering, by creating" (p. 66).

Olivo, Cecco, and Kieser (2001) presented instructional strategies that emphasize the instructor's role as learning facilitator and highlight the students' involvement as active participants from the first day of instruction through the entire course.

To enhance learning, instructors and trainers need to avoid simply telling students and go beyond to include a form of telling, showing, and doing (Forsyth, Jollife, & Stevens, 1999). Trainers and business education instructors may have a tendency to limit instructional strategies to telling because of time considerations.

According to Green (2001), training methods can take a variety of forms ranging from "totally trainer directed to totally trainee engaged. Alternative training methods can be implemented during the training sessions to provide variety and to increase trainee interest" (p. 54). The connection between business education and training has been identified by many sources (Brethower & Smalley, 1998; Bronner, 2000; Green, 2001; Policies Commission for Business and Economic Education, n.d.).

The Activities

The activities presented in this section include using line dancing as a vehicle to teach skill building and role playing as a vehicle to teach decision making.

Line Dancing

After skill-building concepts are introduced in a mini-lecture format, the facilitator asks the group, "How many of you know how to line dance? I'll demonstrate the electric slide for you." The facilitator performs the dance without music once then addresses the group with, "Now it's your turn to dance." Students may respond with the comment, "You're kidding," laughter, or some other form of apprehension. The facilitator leads the learners through each step as described in Table 1.

Table 1
Electric Slide Steps

Step	Instruction
Grapevine Right	Step right with the right foot; bring the left foot behind the right foot; step right with the right foot; bring the left foot next to the right foot.
Grapevine Left	Step left with the left foot; bring the right foot behind the left foot; step left with the left foot; bring the right foot next to the left foot.
Four Steps Back	Beginning with the right foot, step back with the right foot, left foot, right foot, and then left foot.
Forward and Rock	Step forward with the left foot, bring the right knee back and rock. Repeat with the left foot.
The Turn	Step forward with the left foot and scuff your right shoe forward, turning so you are facing the wall to your left.

Tell the students the steps they will be performing, presenting each step separately. Advise learners to take small steps so that they do not run into furniture and one another. In addition, if a dancer makes a mistake with small steps, it is less noticeable than if bigger steps are taken; and balance is maintained more easily. Demonstrate each step for the students, and then ask the students to perform each step as you dance and call out directions.

Once the grapevine right step has been mastered, introduce the grapevine left step. When the grapevine left step has been learned, practice the dance from the beginning, linking the new step to the first one learned. Continue this practice until the entire dance steps have been practiced. Music may then be played to practice the dance. Select a slower-paced song for the first attempt of the dance to music, such as Alan Jackson's "Drive." If time permits, practice the dance to a faster-paced song (such as Brooks and Dunn's "Mi Corrazon") to aid in transfer of learning. Dancers do not perform a dance to only one song; similarly, business professionals do not speak to only one type of audience in one particular environment.

Debriefing after the activity is critical in cementing learning and allowing for reflection. Eikenberry (2002) describes four types of questions that can be used in debriefing learning experiences. These questions help learners to examine the experience, expand on the experience, generalize the experience, and apply the experience. Debriefing questions for the line-dancing activity may include the following:

1. What might have helped you to learn faster?
2. Would written instructions distributed to you as a handout have been helpful?
3. Would written instructions on a transparency or a PowerPoint slide have been helpful?
4. If you do not practice the dance during the rest of the term, how well do you think you would perform in a dance activity component of the final examination? (This is not a part of the final examination; it is merely a hypothetical question.)
5. If you were asked to perform another dance that requires the grapevine step, how well do you think you would perform?
6. What do you think would have happened if the entire dance had been introduced without breaking it into five different steps?

One goal of the debriefing is to enhance students' awareness of how they learn. A discussion of auditory, visual, and kinesthetic learners may ensue. As teachers train, they need to avoid simply using the method by which they were taught or the one that works best for them; different learning styles need to be accommodated in the classroom. Another goal of the debriefing session is to emphasize to students the role of prior learning, practice, and transfer of learning to new situations in building skills they will develop during the training session or course.

Role-playing

Role-play activities engage a number of students in a setting where the students pretend to be individuals in a realistic situation. Role-play experiences are prepared with specific themes. Learners are presented with a scenario that requires certain behaviors. Depending on the acting ability of the participants, the trainer may need to intervene with specific behavior suggestions. The trainer may suggest to novice role players some behaviors the participants should adopt, such as raising one's voice to be heard above anyone else as an indication of aggressiveness, using large gestures for emphasis, pacing the floor to indicate nervousness, or speaking quietly and looking at the floor to indicate a timid demeanor.

The students act out the situation in a way they think is a possible solution to the situation. Oftentimes the situation may entail handling a discipline problem. One student would be the teacher, and the other would be the student who is acting in a manner that requires discipline.

The other members of the class observe how the situation is resolved. They may be encouraged to think about how they would act if they were actively participating in the role-play—would their behaviors be similar to or different from those in the role-play? Other examples of role-plays include (a) participating in an annual evaluation of an employee, (b) persuading a colleague to become involved in a project, (c) demonstrating how to do a procedure, or (d) conducting a meeting following an agenda.

Once the role-play has concluded, it is important for the teacher or trainer to debrief (de-role) the participants (Delahaye & Smith, 1998). As the discussion about the situation and the behaviors of the participants ensues, it is imperative that learners divorce themselves from the persons for whom they played. The comments must be directed to the character, not the actor. If the comments, particularly negative ones, are directed toward the student, the debriefing process has not been successful, and the students who participated may be offended by the comments or choose not to participate again because they were embarrassed, criticized, or offended.

The advantages of using a role play include (a) putting the participants in a semi-real setting that helps them to think and act through the situation and determine what the response might be if they were placed into a real situation of the same nature; (b) providing active learning activities where the students are learning by doing; (c) discussing the resolution after the role play which creates an atmosphere for offering further ideas and discussion, and (d) adding variety to teaching methods teachers use.

Implications for Practice

The instructional strategies presented in this article may be used in various courses, workshops, and training sessions. Particularly for adult learners, active experiential learning is richer and results in the deeper learning advocated by experts. Perhaps as business educators and trainers learn and use new instructional strategies, they will serve as better role models for their students as learners who are flexible and adaptable to a variety of learning methods and strategies. Business educators may also serve as mentors as they bring their students from totally trainer-directed learners to trainee-directed learners so that the learners can become more self-sufficient for their own learning.

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Innovative Activities for Business Communication

Sandy Braathen
Lila Prigge
University of North Dakota

Abstract

The DPE Outstanding Dissertation of 2000 compared behaviorist and constructivist teaching methodologies. Constructivists believe that knowledge is constructed from the context of the environment in which it occurs. This presentation was designed to share some of the innovative activities that were used in the classes. Examples of activities that were used for this research project included rewriting actual business letters, constructing various types of sentences, developing graphic aids, and playing games.

Introduction

All educators, including business educators, are continually faced with making decisions about course content and instructional methodology. This is especially true in the business communication area. The business communication area is important for business education because one needs to possess excellent communication skills in order to be successful in the information-intensive business world today. Business educators realize the importance of the business communication course; however, the challenge remains how to teach the course in order to best help students become more effective communicators.

The difference between behaviorist and constructivist teaching methodologies was the focus of an experimental research study conducted at the University of North Dakota. The purpose of this study was to identify an effective method for providing writing instruction to university business communication students. This dissertation research project compared two methods of teaching business communication. The two methods were traditional, teacher centered and innovative/constructivist, student centered. The research project that was the basis for this presentation received the DPE Outstanding Dissertation Award for 2000.

As part of this research project, the authors spent time developing business communication activities which would follow either constructivist teaching methodology or behaviorist teaching methodology. During this process, several activities were either created by the authors or "discovered" from reviewing business communication literature. In some cases, the activities were variations of activities that were "handed down;" therefore, the original authors or creators are impossible to identify.

Innovative Activities

Student Nametags

An introductory activity that helps instructors and students learn each others' names is having the students create nametags from colored index cards. In addition to writing their names on the nametags, the students write information about themselves in each corner of the nametag. The steps to following in using this method include:

1. Provide students with 3x5 colored index cards.
2. Instruct students to write their name or nickname in the center of the card. They should write the name by which they want to be addressed by others in the class.
3. Instruct students to write the following information in each of the four corners of the card: hometown, major(s), favorite color, and something they like (they can write the word or draw a picture).
4. Students (and instructor) wear the nametags in class each day. Large paper clips work well for students to attach the nametags to their clothing. The tag can be clipped to a collar, necklace, shirt, etc. Tape works well for a single use, but there needs to be tape available for each class period. Pins don't work well with the index cards. As an alternative, students can punch holes in their cards and use string to make the nametags hang around their necks.

The nametags are also useful for helping students get to know one another. The items in the corners help to spark conversation about similar backgrounds or interests. The nametags also provide a way to divide students into groups. Students can be grouped based on the color of their nametag, their major, their favorite color, etc.

Interviewing an Effective Communicator

Rather than having the instructor tell students what it means to be an effective communicator, the following assignment is used. Students are asked to identify an effective communicator and interview that person to determine just how important business communication is in his or her job. The assignment instructions for students are as follows:

For this assignment select a manager or other person you know to spend a great deal of time communicating. After obtaining his or her permission, interview him or her about the communication process. Specifically, ask the following questions:

1. *How important is communication to the successful performance of your job?*
2. *What is an example of a successful communication experience you have had?*
3. *What is an example of an unsuccessful communication experience you have had?*
4. *What communication barriers do you commonly experience?*
5. *What does organizational goodwill mean to you?*
6. *What recommendations do you have for someone who wants to improve his or her communication skills?*

Additionally, be sure to record who they are. If you do not want to use their real name, use their job title. If there are any "unique" or interesting aspects to their job which would make them stand out, you might also include a description of those items. Also list any additional comments they may have given you about the communication process.

Think-Pair-Share

Dr. Frank Lyman (1981) developed a cooperative learning strategy called "Think-Pair-Share." This activity includes the following components:

- Students listen while the teacher poses a question.
- Students are given time in which to think of a response.
- Students are then sometimes cued to pair with a neighbor and discuss their responses.
- Finally, students are invited to share their responses with the whole group.

A time limit is set for each step in the process.

Students benefit from this exercise because they have time to at least think through their own answers to questions before the questions are answered and the discussion moves on. They mentally rehearse responses, and sometimes verbally with another student, before being asked to share publicly. All students have an opportunity to share their thinking with at least one other student, thereby increasing their sense of involvement. Many more students raise their hands to respond after rehearsing in pairs.

The following questions have been used for the Think-Pair-Share activity:

1. *Define business communication. What is it about the business environment that makes "business" communication stand out from other types of communication?*
2. *What are the goals of business communication?*
3. *When a business sends out a letter, what kind(s) of messages are included in that letter? Does the letter "say" anything besides the intended message?*
4. *What are the components of the communication process? Who are the "players" and what are their respective roles in the process?*
5. *Define barriers. What are some barriers to effective communication? How can any of these barriers be prevented?*

Sentence Structure Activity

To ensure that students understand sentence structure, a review of simple, compound, complex, and compound-complex sentences is provided. Dependent and independent clauses are reviewed and the combinations of these clauses which produce the various sentence structures are demonstrated.

Students are then placed in groups of three with each student having a blank sheet of paper. The teacher shows the class the following simple sentences on the screen at the front of the room:

The dog made noise.
The snow came down.
She has an interesting hairdo.
The place was crowded.
A fly was on my food.
He was too thin.

Students in each group pick three sentences and each member of the group writes one of the sentences at the top of his or her paper. Instructions are then given orally to the class.

1. *Write a compound sentence based on the simple sentence at the top of your paper.*

2. *Exchange papers and check the sentence to be sure it is a compound sentence. If the sentence is not compound, the group rewrites it to make it compound.*

3. *Write a complex sentence based on the simple sentence at the top of the paper you now have.*

4. *Exchange papers again and check the sentence to be sure it is a complex sentence. If the sentence is not complex, the group rewrites it to make it complex.*

5. *Write a compound-complex sentence based on the simple sentence at the top of the paper you now have.*

6. *Exchange papers once more and check the sentence to be sure it is a compound-complex sentence. If the sentence is not compound-complex, the group rewrites it to make it compound-complex.*

Examples of sentences written by groups in business communication classes are shown here:

Compound:	The snow came down, and George went to the store.
Complex:	When the snow came down, Herb was baking cookies.
Compound-Complex:	Because the snow came down, I was unable to get my car started; so I missed my meeting.
Compound:	The place was crowded, and I wanted to go home.
Complex:	After the game, the place was crowded.
Compound-Complex:	After they won the game, the place was crowded; and I wanted to go home.
Compound:	He was too thin, and his hair was the wrong color.
Complex:	Although he consumed 5000 calories per day, he was too thin.
Compound-Complex:	Although he consumed 5000 calories per day and wore a hair piece, he was too thin; and his hair was the wrong color.

The class looks at each of the six original simple sentences one at a time, and a student is called upon to read the compound version of the sentence; another student is asked to read the complex version of the sentence; and a third student is asked to read the complex-compound version. After each sentence is read, the class members are asked to indicate if they agree that the sentence is compound, complex, or compound-complex.

International Centre Visit

The University of North Dakota is fortunate to have the International Centre on campus. The Centre is the "cultural home" for international students and serves as a gathering place for students from a variety of countries. It offers assistance with everything from providing basic information, to assisting with visas, to providing a friendly atmosphere for students. The Centre has a kitchen where students can prepare meals for themselves and a living room where the students can gather to watch TV or to visit.

Every Thursday evening, the Centre is transformed into a particular country. Students and/or faculty members from that country provide the program. They show slides from "home," native costumes, native music, etc., and they provide a "free" meal with samples of food common to their homeland. Students in our classes are encouraged to attend at least one of the Thursday evening events and write a reaction paper for points.

The events scheduled for the Fall 2002 semester included the following:

September 12	U.S.A	October 24	Arabia
September 19	India	November 7	Croatia
September 26	Costa Rica	November 14	Iran
October 3	Nepal	November 21	Cameroon
October 10	Brazil	December 5	United Kingdom

Having the International Centre as a resource on campus provides many opportunities for students to learn about diversity. To take advantage of this resource, students are taken on a field trip to the International Centre as a supplement to the chapter on international communications in the business communication text. Rather than have a student from another country come to the classroom to speak to the class, the field trip uses three or four students from other countries to visit with the students in the class. Chairs are placed in a large circle in the large meeting room at the Centre. The students from class and the students from other countries sit around in the circle. The international students are asked to take 5 to 10 minutes to tell the class about their homeland and why they are students at UND. The session is then opened up for questions from the class members. Topics covered vary from time to time, but have included education, politics, social life, arranged marriages, etc.

Students are required to write a reaction paper about the visit to the International Centre and turn it in the following class period. These reaction papers are always very positive. Many of the students indicate that this was the first time they had been to the Centre, and they are very impressed with the Centre and the students who shared their stories with the class. At least half the students say they now plan to attend some Thursday evening events.

For those schools without an International Centre, students from other countries attending the school could visit the business communication classroom. Perhaps three or four students could share their experiences with the class in an informal situation as described above.

Revising Business Letters

Teachers can get a lot of mileage from poorly written business letters they receive in the mail. The names and addresses on the letters should be changed when the letters are retyped for classroom use. Two poorly written letters were used in this research project. They were duplicated and distributed to the students. The students were then asked to revise the letters to incorporate the you viewpoint and more positivve wording.

When students first read the letters, they don't believe that such poorly written letters could have actually been written by business people. The class is divided into groups of four. Each student is asked to revise the two letters to the best of their ability before the next class period. Then during the next class the groups use the four rough drafts of the revisions to compose the final draft of the improved letter. The following instructions are provided for the groups:

Team Rewrite Letter Activity Instructions

Examine the rough drafts of each team member and consider the following:

- a. *Does this letter follow the business communication foundations we learned?*
- b. *Have we applied the business communication principles that relate to written communication?*
- c. *Have we closely followed the three-step process to developing effective business messages?*
  - *Have you correctly identified the primary and secondary purposes of the message?*
  - *Have you used the correct approach to this communication situation?*
  - *Did you analyze for the you viewpoint before you composed your message?*
- d. *Discuss your findings.*
- e. *As a team, collaborate and rewrite this message using your best ideas.*
- f. *Prepare a typed final revision (team effort) and submit in class on ______________.*
- g. *Use the procedures for proper letter formatting in Appendix A of your textbook.*
- h. *All rough drafts will be attached to the final draft upon submission for a grade.*
- i. Good luck and have fun with this!!

Article Reviews

Article reviews can be used effectively for a variety of purposes in business communication courses. The guidelines for using articles and reviews are included below.

1. Students are required to select an article which relates to the given topic. They need to make a copy of the article to turn in with their review.
2. Students write a review of the article including—at a minimum—a reference citation, a summary of the article's highlights, and a discussion of how the article relates to the topic.
3. Students bring their completed reviews to class and share their findings orally in small groups or with the entire class.
4. Additional questions or requirements can be added to individual assignments.

The article reviews are an effective way to introduce students to the topic by allowing them to research the current literature before the topic is covered in class. Thus, they are able to explore the topic without the bias of the class discussion. This activity can also be used to incorporate current events or current technologies into the classroom. Topic areas covered only briefly in the text or quickly changing topic areas lend themselves well to the article review assignment. In addition, since the reviews are written, it provides students an opportunity to practice writing—a key element in any business communication course.

The Quotation Mark Family (Or Where Does the Period Go?)

This is an activity to help students determine when to place punctuation marks inside or outside of the quotation mark at the end of a sentence. The teacher can use a transparency, chalkboard, or white board.

Write quotation marks ("   ") on the board or transparency, and after introducing the class to Mr. and Mrs. Quotation Mark, use the following script. *We will call them Mom and Dad. This couple has been married for many years and has six children. The six children were spread out over the couple's married years. After their first two children, they waited several years before they had two more children. Several years later, they had another two children. The six children are:*

. (Period)
, (Comma)

! (Exclamation point)
? (Question mark)

; (Semi-colon)
: (Colon)

Period and Comma are the babies of the family and are still very young babies. What do you know about how much care babies require? They need to be taken care of all the time. Therefore, you always keep your periods and commas inside Mom's and Dad's arms (inside the quotation marks).

Question Mark and Exclamation Point are teenagers. What do you know about how much care teenagers require? This is the period of time in our lives where we are learning to be independent, but we really aren't able to take care of ourselves completely. Therefore, the question mark and the exclamation point are sometimes inside Mom's and Dad's arms and sometimes they are outside of Mom's and Dad's arms. You have to decide where to place these two punctuation marks by the content of the sentence. If the quote is a question or an exclamation, the question mark or exclamation point goes inside the Mom's and Dad's arms (inside the quotation marks). If the quote is a statement, but is contained in a sentence that is a question or an exclamation, the question mark or exclamation point goes on the outside of Mom's and Dad's arms (outside the quotation marks).

> *Examples: His first question was, "How long have you worked here?"*
> *When will she say, for a change, "You did a nice job on that project"?*

Semi-colon and Colon are the oldest children, and they are young adults. What do you know about how much care young adults require? Young adults are capable of living completely independently. Of course, it is still nice to be able to rely on Mom and Dad, but it is not necessary to their survival. Therefore, the semi-colon and colon always are placed on the outside of Mom's and Dad's arms (outside the quotation mark).

Once you have introduced your students to the Quotation Mark family, they should be able to determine where to place the punctuation mark when used with a quote.

M&M's: They're uM uM Good!

M&M's chocolate candies can be used as props for a number of activities in the business communication classroom. Ways in which M&M's candies can be used include a graphic aids activity and a review of the communication process.

M&M's graphic aids representations. To use M&M's for graphic representations the following steps are taken:

1. Students are divided into groups of three to five members.

2. Each group is given a bag of M&M's candies. The students are instructed to open the M&M's package and count how many of each color are included in the bag.

3. Each group is also given a slip of paper which includes the "standard" number of each color according to the M&M Mars web site (http://global.mms.com/us/about/products/milkchocolate.jsp).

4. Each group is then instructed to create a graphic aid to illustrate the standard vs. actual number of each color. The group is also asked to provide an explanation, in writing, as to why they selected that particular graphic.

5. Alternatives for creating the graphic aids include (a) giving each group a blank transparency and colored transparency markers, (b) giving each group a blank poster board or sheet of flip chart paper and markers, (c) having students create their graphics using computers and using a display projection device to share them with the class.

6. Each group presents its graphic aid to the rest of the class and explains why that particular graphic aid was chosen. Each group also is asked to explain why its graphic is a BETTER alternative than one of the other graphics from the textbook; however, each group needs to select a graphic that hasn't been discussed previously.

It is recommended that the activity be used in class rather than as a homework assignment because the social negotiation within the group is a key element for helping students learn as they decide which graphic is appropriate for their given information.

Additional M&M's activities. M&M's can also be used as an activity to introduce (a) the communication process, (b) nonverbal communication, and (c) negotiation. All three of these begin the same way; variations in the rules of trading and in the discussion can be made to suit the topic.

1. Each student is given a snack-size plastic bag with M&M's. (The M&M's need to be counted so each bag contains an equal number of each color and/or type of M&M's—plain, peanut, peanut butter, crispy.)

2. Students are instructed to trade with their peers so that they have all "the same" M&M's. "The same" does not need to be defined; it could mean all plain, all peanut, all the same color, etc. How students interpret the instructions provides an additional lesson about communication.

3. Students are allotted a certain amount of time in which to trade, usually 3-5 minutes. Depending on which of the three topics is being covered, the rules can be altered. For example, to introduce nonverbal communication, students must make their trades without speaking. Limitations may also be placed on the trading by round. For round one students are not allowed to speak. For round two students may speak. The class compares which was easier and why. It's important to limit the trading to short time periods so the majority of the time is spent discussing the topic rather than trading the M&M's.

M&M's can also be used to introduce the art of negotiating. Students are instructed to trade individually for the first round. For the second round, they team up with a "business" partner. Their trading experience is used to discuss multiple dimensions of negotiation including the various strategies they used like "double teaming," "divide and conquer," "two heads are better than one," and the general efficiency of working together. The strategies students use to convince someone to trade their M&M's are usually quite interesting.

Games

Games provide a fun way for students to learn new material or to review old material. Any number of board games or short action games can be modified to fit the business communication classroom. The four games included here have been "tested;" however, instructors may use these games as inspiration to develop or revise games of their own.

Baseball

One game that can be used for reviewing material is the game of baseball. Although the authors are unable to give credit to the developer(s) of this game, they have used it with success in the business communication classroom. The game seems to work best for reviewing; it doesn't work as well for introducing new topics. The rules for the baseball game are as follows:

1. Prior to starting the game, a list of questions and answers to be used is developed. The questions are grouped according to level of difficulty. Based on difficulty, the questions are labeled "single hit," "double hit," "triple hit," or "home run."

2. Two baseball diamonds are needed—one for each team. Options for the diamonds include (a) drawing the diamonds on the chalkboard, white board, flip chart, or (b) drawing the diamonds on large sheets of paper and placing them on the floor (masking tape could also be used on the floor). For the second option, the diamonds are made large enough for the "players" to actually stand on the four bases. For the first option, post-it notes are used to represent the players and are moved around the bases.

3. Students are divided into two groups. It does not matter if the teams are exactly equal in size. However, with an odd number of students and even teams are desired, one student can serve as the scorekeeper. Having a scorekeeper allows the instructor to concentrate on the questions and keeps the game moving in a more timely manner.

4. When the leader says "Batter UP!" one "batter" from each team comes forward. Batters can either stand or sit—they need to be separated from their teammates so the leader knows who is actually up to bat.

5. The batters are instructed that they must raise their hand (ring their bell, etc.) and be called on in order to answer the question. If a batter answers without being recognized, the other batter can raise his or her hand, be recognized, and advances a base(s).

6. When recognized and responding with a correct answer, a batter advances the stated number of bases. Prior to asking the question, the leader should announce, "This is a single hit question." OR "This is a double hit question." Etc.

7. When a batter reaches home base, his or her team scores a point. Each team's score can be easily kept by making tick marks on the board.

8. If a batter answers a question incorrectly, he or she "strikes out." When a team has three outs, its "inning" is over and its bases are cleared. The other team's bases remain as they are; the outs and innings only affect one team at a time.

9. Individual instructors can determine whether teams are allowed to "coach" their players. If teams are encouraged to "support" their batters, it keeps everyone involved in the game.

10. Another decision to be made is whether teams are allowed to look up answers (obviously, it could make it more competitive if they couldn't look up answers).

11. To keep the game moving along, it is suggested that a time limit be set for each question. If neither batter raises a hand to answer the question within the time limit, there is no gain or penalty for either team. Time is called and batters return to their respective teams. New batters take their places and the game resumes.

12. Once a batter raises his or her hand and is recognized, he or she must answer immediately. If the batter doesn't answer or stalls for time, he or she is out. The other batter should be given the opportunity to answer the question within the time limit.

13. The game works best with short answers. In order to judge the answers quickly, the leader must have the answers determined prior to starting the game. It also helps to have the questions in writing, so the leader is less likely to misstate or inadvertently give away the answer. For more difficult ideas, the written part of the question should include a partial answer and have the batter provide "the rest" of the answer. Another possibility is to use true or false questions for some of the concepts that are more difficult for students to give a direct answer to. This way, the more in-depth topics can be covered.

14. Another option for the questions would be to have them on overhead transparencies or PowerPoint slides. This is helpful for the visual learners in the group. It may provide an unfair advantage to a faster reader, so the leader may still want to read the question and then make it available to view.

15. The leader should consider repeating questions, especially those that previous batters have missed the first time. Repeating questions rewards students for paying attention and reinforces difficult concepts. However, if the questions are available in writing (Number 14 above) it is difficult to change the order of the questions during the game.

16. At the end of the time period designated or when all questions have been answered, the game is over. The team with the most points wins. A reward for the winning team can be provided by the instructor or winning can be its own reward.

Diversity Bingo

Another game that can be used in the business communication classroom is Diversity Bingo. This game is particularly appropriate when covering the topic of international communication.

1. Rather than numbers, the squares on the "bingo" cards have characteristics written or typed inside them.

2. In order to get a square covered, students need to move around the room and find other students who meet the characteristics in the squares.

3. When someone meets the characteristic, that person signs (or initials) the other student's bingo card.

4. The student who has the first BINGO (straight across, up and down, or diagonally) wins.

5. A variation is to play "Black out Bingo" where students need to cover all squares in order to win.

6. Depending on the amount of diversity in the classroom, the instructor can make the criteria so students have to meet it exactly (citizen of a country other than the US), or they can make the criteria so students have to be familiar with it (have family or friends who live in a country other than the US). The squares can be customized to meet the characteristics of each individual class.

7. The best part of the game is going over the squares and learning who met the characteristics of each square. Each square provides an opportunity for a discussion about each of the topics. Students who feel uncomfortable talking about themselves and might not interact in a "traditional" discussion, often provide additional information after the Bingo winner tells who fits the square's criteria.

A variation of Diversity Bingo is to play Business Communication Bingo or Networking Bingo at the beginning of the semester to introduce class members to each other. Criteria in the squares can be simple like "has black hair," "is younger than 23," "has Jean for a middle name," "is a marketing major," or similar characteristics. Of course, the instructor needs to make sure to select criteria that will not embarrass or offend any of the class members.

Swat the Spot

When Dennis Krejci from Beatrice, Nebraska, presented a workshop at a professional conference, he used a game which could easily be adapted to the business communication classroom. The following are the rules of the game:

1. To prepare for the game, the instructor creates a number of sheets with the "answers" in large print. The answers are usually one word or only a few words. To add variety, the sheets can be different colors.

2. The sheets are taped on a classroom wall.

3. The instructor gives two students fly swatters and asks them to come forward to "Swat the Spot."

4. The instructor then asks a question and the students swat the correct answer with their fly swatters.

5. If students do not swat the correct answer, they are encouraged to try again. They keep "swatting" until one swats the correct answer. In case both students swat the correct answer, the fly swatter of the one who gets there first will be covered by the other student's swatter.

6. The students then hand their swatters to the next two students.

To make the game a little more competitive, the class can be divided into two teams. One representative from each team goes up to "swat" for each question. The first student to swat the correct spot scores a point for his or her team. The team with the most points wins.

Grammar Jeopardy

This final game was devised by students in a business communication class. Following the adage that we learn what we teach, the students are divided into teams and are asked to take responsibility for becoming the "experts" on a given part of speech (verbs, nouns, pronouns, conjunctions, etc.). Each team is then responsible for developing a creative way to teach/review its assigned part of speech to the other class members. The team members are asked to develop review sheets or other materials to help their classmates remember their part of speech. This activity has yielded several creative presentations throughout the years. An example of the students' creativity was the development of grammar jeopardy. One of the student teams developed a jeopardy board using a table in PowerPoint. The categories were all related to verbs. During the presentation, the team members were the contestants and the game was scripted. However, a real game could be developed for students to play in class.

Perhaps the easiest way to adapt the game to the classroom would be to develop web pages. The game could be developed using hyperlinks from the main board to the answers, with links back to the main board from each question. Jeopardy could be developed for reviewing grammar as these creative students used it, or it could be used to review other topics. The discussion that is generated by the answers is important to keep students focused on the main points. To help ensure this focus, bonus questions can be developed. Once a student provides the correct question, he or she can be given an opportunity to earn additional points (money) by providing the additional information requested. The class could be divided into teams and the game could be played much like the TV version. With a little creativity, the options are unlimited!

Games are a fun way to develop student interest in business communication. However, instructors must strive to reinforce the importance of the business communication topics and not focus on the game itself or on the winning or losing.

Summary

Many of the activities described in this article could be used in either a constructivist or a behaviorist business communication classroom. The activities alone do not define one area or the other Rather, the USE of the activities, the philosophy and foundation for the entire course, and the sum of teaching practices will help to create one environment or the other. The use of a single activity does not change an environment from behaviorist to constructivist or vice versa. The activities presented in this article are simply ways to vary your teaching and add some fun to the business communication classroom.

Encouraging teachers to take a little time to make their traditional teaching methods more student-centered helps both the teachers and their students enjoy the learning experience more fully.

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Teaching Communications Online Using the Master Teacher Model

William J. Wilhelm
Indiana State University

Abstract

The Indiana State University School of Business online education program is organized with a set of guides that constitute the Master Teacher Model of online instruction pioneered by the United Kingdom's Open University. The Model utilizes an instructional structure whereby content is prepared by central academics and tutored by part-time associate faculty members. This paper focuses on the background of distance education at Indiana State University and then the Master Teacher Model as utilized in an online business communications course in the School of Business. The discussion includes specific roles and responsibilities in the Model, course development and delivery methods, teaching strategies, student assessment methods, and course evaluation techniques.

Introduction

Most online learning strategies initially employed in distance education have been developed by adapting traditional classroom approaches to the online learning environment (Pitt & Clark, 2001; Salmon, 2000). Many of the traditional classroom pedagogical strategies have proved to be less effective in online courses because of the different learning dynamics at play brought about by boundaries of separation inherent in distance education courses. These learning dynamics include the relationships between instructors and students, between students and the course content and between students themselves. Technological linkages that are not intuitive to traditional learners bridge these boundaries of separation. Because of these technological differences that complicate the dynamics of learning online, there is evidence that participants in distance education courses struggle to find their sense of time and place in the online environment (Salmon, 2000). Large class sizes in online courses can confound the struggle even more.

The Master Teacher Model presents a framework by which online courses can be developed and taught to a large number of students that will result in acceptable levels of student learning comparable to traditional classroom achievement. The information in this paper focuses first on the background and evolution of distance education at Indiana State University; then on the details of the Master Teacher Model for distance education including roles, responsibilities and qualifications; followed by content development and delivery models, teaching strategies, student assessment methods, and course evaluation techniques. This article should be informative to any educator, administrator, or program director engaged in or contemplating Web-based distance education courses intended to reach a large number of students in a cohort system of course work.

Distance Education at Indiana State University

Indiana State University has a distinguished history of offering distance education programs in a number of disciplines. The institutional missions are the leading change agents for this development of distance classes. Current distance education programs at Indiana State University grew from the need "to improve the educational attainment of the state's citizens through articulation agreements with associate degree granting institutions, the need to reach practicing educational professionals who wished to obtain graduate credit in educational administration, and the launch of a nationwide doctoral consortium in technology" (McLaren & Nelson, 2002, p. 82). Indiana State University offers associates degrees through doctoral programs in the areas of business, education, nursing, and technology, among others (Cockrell & Pearson, 2002).

Indiana State University entered into a partnership with Ivy Tech State College and Vincennes University to facilitate seamless articulation from these two-year institutions. Known commonly as DegreeLink, the intention of the partnership is to provide access to a baccalaureate degree for individuals who are unable to attend a residence campus program due to job, financial, or geographic restrictions. Students in this program receive courses through a variety of distance education technologies. Indiana State University offers bachelor degree-completion programs via distance education in business administration, career and technical education, community health, criminology, electronics technology, human resource development, industrial supervision, industrial technology, insurance, mechanical technology and nursing (Indiana State University, n.d.). The business administration bachelor degree-completion program is designed for transfer students - specifically those individuals who have completed an associate of science in business administration. All required junior and senior level courses in the business administration major are offered via the Internet.

In 2001, Indiana State University's School of Business entered into partnership with the United States Open University, a subsidiary of the renowned distance education institution, the Open University of the United Kingdom. The Open University, established in 1969 by Royal Charter, is Britain's largest university providing over 200,000 people courses of study, the majority of which are available through distance education technologies. While the United States Open University-Indiana State University School of Business partnership was dissolved with the closing of the United States Open University subsidiary in June 2002, the pedagogically sound methods for distance education delivery pioneered by the Open University were retained by Indiana State University and continue to be utilized in the School of Business distance education programs.

Overview of the Master Teacher Model

The Master Teacher Model utilizes a hierarchy of academics rather than a single instructor to teach an online course when enrollment is large. When enrollments in courses are under twenty-five students, a single professor proficient in the course content, distance education delivery technology and online pedagogy typically teaches the single course. In the case of high enrollment courses, however, where student numbers far surpass twenty-five, the Master Teacher Model can achieve unprecedented economies of scale (Mason, 1998). At Indiana State University, the business communications writing course, ASBE 336, Business Report Writing, is required for all School of Business students. The course is also offered campus wide as an option for any undergraduate's third English credit. A typical semester's enrollment can easily exceed 180 students, with distance education learners sometimes accounting for up to half of that number.

With this model, the central academic, referred to as the instructor of record (master teacher) develops the entire course and selects the learning strategies that will be used. Effective online strategies include learning contracts, lecture, discussion, self-directed learning, mentorship, small group work, the project method, collaborative learning, case study, and the forum (Pitt & Clark, 2001). The Master Teacher Model facilitates the incorporation of these strategies as the instructor of record deems appropriate for accomplishing the course objectives. The instructor of record also develops the syllabus, assignments and grading rubrics, exams and quizzes, and is responsible for the presentation of the developed course in the online interface.

The part-time associate faculty members teach the course using the materials and techniques developed by the instructor of record. Associate faculty instructors are not authorized to change the course content without the authorization of the instructor of record. However, some instructors of record may encourage adjuncts to use additional teaching techniques appropriate to the adjuncts' teaching styles as long as the basic course objectives are met.

Roles, Responsibilities, and Qualifications for Individuals in the Master Teacher Model

The Master Teacher Model employs at minimum, two levels of responsibility, the master teacher and the associate or adjunct faculty members. In many cases where distance education is guided by institutional policies, there is a distance education program director overseeing the entire distance education program. Also at many institutions employing distance education programs throughout the institution, there are also technological experts to assist in training faculty and implementing the courses and programs online. This section details the roles and responsibilities of each of these levels at Indiana State University.

Program Director

The Indiana State University School of Business distance education online program is directed by a single program director that reports directly to the Dean. At Indiana State University, the Assistant Dean fills this role. In consultation with the Dean, the departmental chairpersons and the program area directors, the program director oversees all aspects of the online program and monitors developments in all aspects of the University's degree-completion program. In consultation with the program area coordinators, the online program director ensures that courses within the program areas are developed (course content is the domain of a program area), presented, assessed, and maintained according to School of Business and University standards, policies, and procedures. The online program director participates in the recruitment of adjunct faculty for courses within the online program and ensures that they are adequately trained and monitored. Qualifications for program director include strong administrative skills, basic technical knowledge (or the ability to become trained in the basics of the institution's distance learning technologies), and effective communication skills. A program director must include faculty members in the planning process so that the goals for development of programs and courses are effectively articulated (Carter & Goodrum, 2002; Greer, 2002).

Instructional Designer

Although it is not hard to imagine a faculty member who is knowledgeable in his or her content area, proficient as an instructor, and competent with distance education technology, it is likewise not hard to imagine that many new faculty members entering institutions of higher education are not proficient in all three of these. In successful distance course delivery, the faculty member must address all three of these areas in order to offer a distance education course that will accomplish its intended goals. Institutions that are committed to offering competent distance education programs must provide faculty members with assistance in developing effective distance education course delivery methods and effective pedagogical techniques. Instructional designers help serve this purpose.

An instructional designer is a curriculum design specialist who collaborates with faculty members who are in the process of developing distance education courses on such topics as the nature and frequency of course assignments, software technical issues, and student interactions while using the distance education interface. Instructional designers do everything from working with faculty on the conceptual design issues and implementation issues of readying an online course for delivery to solving technical problems once the course is developed (McLaren & Nelson, 2002). Because of Indiana State University's commitment to distance education, the Center for Lifelong Learning conducts a five-week Course Transformation Academy (CTA) for faculty members interested in developing an online course.

Taught by instructional designers with the assistance of library specialists and proficient online instructors, the CTA assists faculty members in transforming a classroom-based course to a Web-based course. Curriculum for the CTA covers educational theories for distance education, modalities for distance course delivery including Web-based and two-way video, presentation software instruction, copyrights, and course evaluation techniques. Additional enrollment benefits include one-on-one assistance in the development of a faculty member's distance education course, layout and design assistance for course Web pages, and ongoing technical support throughout course delivery.

Instructor of Record (Master Teacher)

When two or more sections of a School of Business online program course are offered during a term, the Master Teacher Model of online learning is employed. In addition to preparing assignments, examinations, grading rubrics, syllabi, Web site, and course materials, the instructor of record acts as the operational line manager for all academic matters for the associate (adjunct) faculty instructors assigned to the course, and ensures that the associate faculty instructors are trained in the use of the Web-based interface and the selected learning strategies employed in the course. If on-campus training in the Web-based interface for associate faculty instructors is not possible before the course begins, the instructor of record, in conjunction with an online course designer, trains the associate faculty members through the use of a telephone conference call and synchronous online computer instruction.

Instructors of record are the first line of support for answering queries about the course from prospective students and associate faculty. Mentoring associate faculty instructors with the course materials and with preferred teaching techniques at the early stages of a course is critical to the associate faculty instructor's success in facilitating student learning. Associate faculty supervision by the instructor of record includes monitoring their performance in grading assignments, mentoring new associate faculty as needed, and for reporting to the School of Business Online Director. The instructor of record job description follows:

1. To provide academic leadership in the course, including providing advice on course enrollments, credit transfer, and curriculum planning.
2. To be responsible for the course implementation on each occasion it is offered to students, including being the first line of support for answering queries about the course from prospective students and associate faculty.
3. To act as operational line manager for associate faculty for all course academic matters.
4. To be responsible for monitoring the performance of associate faculty in grading assignments and for mentoring new associate faculty as needed, and reporting to the ISU program director.
5. To be responsible for preparing assignments, examinations, marking guides, syllabi, website updates, course materials, and other course revisions in accordance with a schedule agreed upon with the program director, and within the agreed guidelines for the course.
6. To assign final grades to students in conjunction with associate faculty instructors and to transmit grades to the ISU program director for approval.
7. To review and revise, as needed, the course on a regular basis based on institutional performance and academic performance.
8. To attend the program debriefing at the end of a semester.
9. To complete any evaluations organized in the context of the program.
10. To contribute to the annual review of curriculum as required by the program.

Qualifications for an effective instructor of record include strong content area knowledge, effective communication and leadership skills, and technical proficiency in the distance learning delivery systems. In the Master Teacher Model, however, instructors of record, who are the authors of the course materials, do not look after groups of students in the sense that a traditional classroom instructor does. That responsibility rests with the associate faculty.

Associate Faculty Instructors (Adjuncts)

Associate faculty instructors are hired when two or more sections of an online course are taught in one semester. As associate faculty instructors, they provide the primary interface with students and teach the course. Associate faculty instructors report to the instructor of record for the course and to the program director for all operational matters. Associate faculty instructors have the following job description:

1. To understand the content, materials, and learning outcomes for the course.
2. To act as first point of contact with the program for up to 25 learners per section.
3. To initiate contact with each student within the first week of the course to introduce themselves.
4. To assist students with all aspects of their study, referring to the instructor of record or other associates as necessary, and help them to become effective learners.
5. To advise students on University policy, taking advice from or passing on questions via the Student Services Office or the instructor of record as necessary.
6. To initiate electronic interaction (and other contact, as appropriate) with each student and encourage, stimulate, and monitor student progress.
7. To grade and comment on assignments.
8. To lead discussion in general electronic discussions as required by the course.
9. To keep and report on students records as required by the University and to abide by the administrative and academic regulations of the University.
10. To participate in required training and development activities.
11. To report on the presentation of the course to the instructor of record through the course evaluation procedures, as a contribution to the academic development of the University, and to complete any evaluations organized in the context of the program, including participating in any program debriefing at the end of the semester.
12. To perform such other duties and responsibilities as may from time to time be assigned to them.

Qualifications for effective associate faulty instructors include proficiency in the content area but not necessarily to the degree of the content specialist, i.e., the instructor of record. Associate faculty instructors know something of the subject matter too but have training and expertise in dealing with students. Acting more as tutors and moderators of discussions, they deal primarily with students but in different ways because everyone is working online. Like a tutor, the associate faculty member does the job part-time and probably has another job too. Typically this might be teaching, but it doesn't have to be (Salmon, 2000).

Content Development and Delivery Model

The communications course taught in the Indiana State University School of Business focuses on organizational written communication and oral reporting. Development of the online course was based on the classroom course that has been taught at the University for several years. Textbooks and supplemental lecture notes serve as the basic content for the course, while class discussions and instructor feedback on students' written assignments guide student learning. The course is not an independent study course whereby students can complete and submit assignments according to their own schedules. Students complete the course as a cohort group using the schedule established in the written syllabus which includes due dates for all assignments and examinations.

The content + support model is the delivery model is that is used for this course. The model supports the notion of relatively unchanging content materials which can be tutored by an associate faculty instructor rather than the instructor of record (Mason, 1998). The model relies on the separation of the course content, which is delivered primarily by print, and the tutorial support, which is delivered through class discussion threads, chat room discussions with the instructor (associate faculty instructor) and peers, and graded assignments. Rudimentary amounts of collaborative activity among students assigned to group activities, peer commenting on each other's work, and online assessments are supported by online discussion group threads, all-user computer conferencing and chat room discussions.

Teaching Strategies

The products of the assignments in this communications course are primarily written reports based on case analyses. Each report is a different type (short memorandum, medium letter, long manuscript, oral PowerPoint), has a different purpose (informative, recommendation, progress, analytical), and involves a varying degree of investigation and analysis. All assignments are based on cases that vary in the degree of information provided to the learner. The course textbooks and supplementary instructor of record notes provide the primary content for the course; therefore associate faculty instructors do not dispense information to the students as an instructor would normally do in a traditional classroom setting. Associate faculty instructors act as a tutors and moderators to mentor students through the learning process. It is critical that associate faculty instructors have the pedagogical skills and understand the technological tools available to them in order to establish positive instructor-learner relationships with their students.

In the Master Teacher Model, as in all methods of instruction, it is the instructor's proficiency at and dedication to building instructional relationships with his or her students that most positively affect student learning (Salmon, 2000, Stout, 2002). Through the use of both asynchronous and synchronous communication, the associate faculty member can help establish a positive learning environment for the distance learner. Stout (2002) states that through "affirming, energizing, and productive interactions, instructors and learners achieve a state of 'we' and 'us.' Creating opportunities for constructive togetherness is vital because sharing, creating, deciding, and building something together produce high-performance learning" (p. 104). Instructor-to-student discussions and student-to-student discussions take place synchronously in chat sessions and asynchronously in discussion threads and through the use of email.

Synchronous Communication

Although synchronous discussions are not difficult to schedule for instructor-to-student discussions, it is often difficult to get 100% participation from the true distance education students when class sizes are large as well as when class sizes are small. Many distance learners are non-traditional students who have full-time jobs, families, and other priorities in their lives besides distance education. The greatest success associate faculty instructors have had using synchronous discussions in these classes that typically have 25 students occurs through the use of online instructor office hours. Using the chat feature, and typically held two times a week for approximately one hour in the evening, associate faculty instructors have noticed that some students do, in fact, log onto the online office hours. The evening time slot is most convenient both for the non-traditional students as well as the associate faculty member who also is likely to have another job. Although slow at the first part of a semester, with constant friendly reminders from the instructor about the benefits of the online office hours, students do show up more as the semester goes forward. It is a valuable tool for those students that do show up because they can learn from answers, suggestions, and tips for a variety of inquiries from fellow students.

Another potential problem with synchronous instructor-to-student discussions has to do with the structure of the discussion itself. Synchronous discussions need an instructor well versed in the synchronous discussion technology who has also established for the students a set of rules for interacting in the discussion to avert chaos. Critical success factors include a clear structure for the session, quality visual aids, clear objectives, well-defined participant roles, and mandatory courtesy between and among all participants. Frequently the instructor must establish the maximum length of each posting permitted, otherwise those individuals who have the abilities to type fast and write profusely may dominate the discussion. All of the discussion procedures must be shared with the students before the session begins and monitored throughout to ensure a fruitful interaction for all (Salmon, 2000).

Used primarily as a communication tool to facilitate group assignments, synchronous student-to-student discussions can suffer from the same deficiency that plagues whole-class instructor-to-student synchronous discussions, i.e., lack of participation by all assigned students. Associate faculty instructors must insist on full student participation in group activities and instructors of record should make student participation a part of each student's grade to help ensure that group activities do not get completed by only a few high achievers in each group. Also, peer evaluations can be factored into each student's grade to help ensure full participation. As with instructor-to-student synchronous discussions, the associate faculty instructor should establish a guiding structure for the student-to-student interactions and periodically monitor the discussions.

Synchronous discussions can add a sense of presence and immediacy that is attractive to students engaged in online learning. Students can engage and get to know each other. Many find that being online together is fun, so long as the discussion time allotted is not excessive, say half an hour or so (Salmon, 2000).

Asynchronous Communication

Asynchronous online communication tools provide associate faculty instructors several options to develop instructor-learner relationships to improve learning. Asynchronous communication also allows every learner, at his or her own choice of time and place, to access information. Those whose primary language is not English, those who need to review terminology, or those who have a full-time job, are less disadvantaged than in a traditional classroom situation (Salmon, 2000). This freedom from fixed, rigid schedules is one of the greatest advantages of distance education. Discussion threads, announcements, and email are the primary forms of online asynchronous communication.

Discussions

Discussion threads established online by the instructor offer students time to contemplate the issues and topics before adding their own contribution. Online asynchronous discussions support all five stages of learning identified by Salmon (2000): access and motivation, online socialization, information exchange, knowledge construction, and development. Access and motivation is that stage where the participant learns the technical protocols involved in accessing and navigating the online course and overcomes his or her fears about distance education versus a traditional classroom setting. Discussion tools allow instructors to post instructional announcements regarding technical information and protocols as well as technical and navigational question and answer threads that all students can access. Especially important at this stage is the associate faculty instructor's friendly tone in his or her communications with students. Instructors must constantly encourage the students, acknowledging their fears and assuring them that their efforts in adjusting to the distance education environment will be rewarded.

Discussions during the online socialization stage help shape instructor-learner relationships and student-to-student relations. In the online communication course at Indiana State University, associate faculty instructors are obliged to post to the discussion board both a welcome message containing expectations and guidance for success in the course and a personal introduction, both of which should maintain a friendly tone and non-authoritative demeanor. Students are instructed to also post a personal introduction and to comment on other students' postings where there might be common interests. This activity begins the valuable socialization process that can be expanded through the use of additional discussions or synchronous chat. Up to this point, there is no concentrated effort to address course content.

During the information-exchange stage, where course content is engaged by the students and clarified by the associate faculty instructors, there exists potential for information overload. Discussions threads allow the associate faculty instructors to redirect the students to the objectives of each assignment and the relevance and importance of the course content. Clarification of the myriad of content-related and case-related details takes place through instructor-moderated class discussions that help students learn answers to their questions, focus on course objectives, and prioritize their writing activities in order to complete their assignments.

At the knowledge-construction stage participants begin to interact with each other in more exposed and participative ways. They formulate and write their ideas or understanding of a topic or assignment with their peers and with their instructor. Their grasp of concepts and theories is enhanced through debate and by examples advanced by others. The issues dealt with at this stage are those that have no right of obvious answers (Salmon, 2000). At this stage, instructor-moderated discussions give way to instructor-monitored group discussions in which the students construct the knowledge relevant to solving case studies, organizing analyses, deriving conclusions, making recommendations and writing the report.

At the development stage, students work cooperatively to research journal articles, books, and other text-based sources that can provide information relevant to the capstone case analysis that culminates with a formal analytical report. Students work in groups to discuss the problem statement and to formulate the scope of the investigation. Associate faculty instructors are encouraged to set up exercises and online events that promote critical thinking in discussion participants, such as commenting on and critiquing each other's writing or research findings.

Announcements

When associate faculty instructors regularly post announcements to a specific area of the Web interface, students quickly develop the positive habit of checking in at that area of the Web site each time they log on. Announcements at the Web site do not get lost because of email "glitches" or overfull mailboxes. Reminders such as assignment due dates, exam dates and procedures, chat room office hours, current discussion threads, and tips to better complete their assignments can save the associate faculty instructors a good deal of extra time spent answering email inquiries from students about the same topics.

The tone with which the instructor composes his or her announcements can have a powerful effect on the students. Friendly, conversational announcements will create a mood that is more akin to the typical classroom that students have grown to expect in traditional learning. That does not preclude the instructor from taking a more authoritative tone when necessary. Used properly, the announcements area of a distance class Web site quickly becomes a regular point of entry for students when going to the site and can become a very powerful communication tool for one-way instructor-to-student dissemination of information.

Email

Email is a very effective communication tool that can be used one-on-one or among members of a group. To help ensure that important announcements reach all students or a select group of students in a timely manner, for example those who have not turned in their assignments, email can be used as a redundant mode of communication to contact students who might not conscientiously visit the announcements area of the course Web site. Email is an especially effective communication tool for associate faculty instructors to use to develop the instructor-learner relationship by corresponding directly to individual students, addressing their distinct fears, concerns, and questions. Used as a group communication tool, email is better employed in small group activities as a redundant mode of contact for the group members when discussion threads or synchronous chat may not be readily available to group members. Emails can follow individuals throughout their normal workday via computers, cellular phones and palm-help computing devices, whereas discussion threads and chat rooms must be accessed by going to the course Web sites.

Email used for interactive group communication can become problematic when used as a primary rather than a supplemental form of communication. Replies attached to emails and reposted to all members of the group can quickly become overwhelming in number and therefore cumbersome to read and understand. Communication efficiency declines rapidly and the benefits of a group dialogue are lost. When a significant amount of interaction is desired or expected, the discussion tool with an archiving function is a more practical choice. The instructor of record should structure the group interactions in the course with this in mind. The discussion method is the correct choice when the communication is intended for everyone in a particular group, when it is expected that everyone in the group will have the right to reply, and when there is benefit from everyone in the group seeing the replies (Salmon, 2000). Of course, students will still utilize email as well as the telephone in some instances. No matter their choice of communication method, the discussion tool should be made available for group activities and should be reinforced as the communication tool of choice by the associate faculty instructor.

Student Assessment Methods

The associate faculty instructor begins informal formative assessment during the initial access and motivation stage of the online communications course. A student's ability to utilize the Web interface communication tools is demonstrated by his or her ability to complete a series of un-graded practice exercises such as uploading a document, participating in the personal introduction discussion thread, emailing a message to the associate faculty instructor, and participating in a brief chat room discussion.

During the socialization stage, which also takes place early in the course, students are required to submit their first two paragraph development exercises via a discussion board thread set up by the instructor of record and moderated by the associate faculty instructor. Each student in the course is obliged to read each other student's submission and make comments, no matter how brief, on at least three other student's submissions. This activity is designed to help establish learner-learner relationships that are important during group activities that occur later in the course, and to reinforce each learner's ability to engage in productive online dialogue. Each student's assignment submission is copied to the associate faculty instructor's desktop, graded, and returned to the student. In the discussion thread, the associate faculty instructor posts critical but constructive comments regarding the submitted paragraph assignments. All students can read the associate faculty instructor's comments and can, in turn, ask follow-up questions to clarify misunderstandings or to elicit more detailed explanations.

Student assessment during the information-exchange stage involves an automatically graded multiple-choice midterm exam and one-on-one assessment of each student's assignments by the associate faculty instructor. Written assignments at this stage include a series of written short reports. The associate faculty instructor downloads each student's uploaded report document, grades it using a rubric supplied to the students and the associate faculty instructor by the instructor of record, and returns it. Feedback to each student includes instructive comments of sufficient detail regarding grammatical, formatting, and content errors that the student can comprehend the nature of his or her mistakes; however the feedback does not include extensive editing. Associate faculty instructors use the discussion board to offer general feedback to all students. Numeric grades for the midterm exam and each assignment are available to each student through the Web interface.

During the knowledge-construction stage, group interaction becomes more important. A written group assignment and a group PowerPoint presentation assignment are completed during this stage. The associate faculty instructor assigns members to each group and moderates group chat rooms and discussion boards that have been set up by the instructor of record. Informal formative assessment takes place during this moderating process. The associate faculty instructor acts as a guide and mentor to the student groups at this stage, supporting them in organizing and analyzing case information, formulating conclusions and recommendations, and constructing report outlines. Student groups submit a single assignment for each of the two group assignments. The associate faculty instructor downloads each group's uploaded report document, grades it using a rubric supplied to the students and the associate faculty instructor by the instructor of record, and returns it to each student. Included in the grading for the group reports are peer evaluations with which each student must rate the level of participation by his or her fellow group members. The associate faculty instructor includes the peer evaluation scores in calculating each student's grade for the group assignments.

During the development stage, group interaction is integral to the learning process. At this stage, students begin work on the capstone large analytical formal report. Based on an open-ended case study, this assignment involves database research for journal articles, books, and other text-based sources that can provide information relevant to the case analysis. Students work in groups to discuss the problem statement and to formulate the scope of the investigation. Through the use of chat rooms and discussion boards set up by the instructor of record for each group, the associate faculty instructor again serves as each group's moderator, guide, and mentor in the process of gathering data, organizing and analyzing information, reaching conclusions and formulating recommendations. Each student writes his or her own formal report and uploads it to the Web interface. The associate faculty instructor grades each report using a rubric supplied to the students and the associate faculty instructor by the instructor of record, and returns it to each student.

Throughout the course, the instructor of record monitors student assessment by requesting copies of selected graded assignments from each associate faculty instructor. When necessary, the instructor of record makes recommendations to the associate faculty instructor to adjust his or her grading methods to better comply with the objectives of the course. Final grades are recommended by the associate faculty instructor but are assigned by the instructor of record.

Course Evaluation

Despite the potential advantages of Web-based courses, there has been a lack of systematic research on the comparative effectiveness of such courses (Wagner, Werner & Schramm, 2002). Indiana State University has not yet decided upon a standardized method for all online course evaluations. Some instructors are mailing the University student instruction review forms used in classroom evaluations to distance education students. Other instructors have set up unique online student surveys for their courses. The Indiana State University School of Business online program director and instructors of record are currently in the process of defining the course evaluation methods for the courses offered. Utilizing a single online student satisfaction survey for all School of Business online courses, the School is leading the way in course evaluation at the University. This semester will see the results of the online student course evaluation surveys compiled electronically for each course section as well as aggregately throughout the School of Business.

Summary

The Master Teacher Model of online instruction allows for significant economies of scale in educating large groups of cohort students involved in taking a single course. By using a highly defined hierarchy of roles and responsibilities for each individual in the Model, effective learning can approach comparable levels for several sections of the same course with the same course objectives. Distance education students can learn significant content through the Master Teacher Model collaboration that employs effective pedagogical strategies coupled with well designed course Web site interfaces.

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PART III
RESEARCH REPORTS AND TRAINING

Conducting Longitudinal Research

Michael Bronner
New York University

Abstract

Longitudinal research can often provide more depth than one-shot survey, experimental, or case study research. Longitudinal research allows for reflection and confirmation of results, as the passage of time provides a more accurate lens through which findings may be reviewed and the evolution of existing situations can be measured. This article will illustrate the process involved in conducting longitudinal research and provides a road map, which may be useful in conducting one's own research.

For the most part, business education research tends to be of two types: quasi-experimental with non-randomized control and experimental treatment groups and survey and correlation research. Both of these research paradigms offer a valuable snapshot of what is going on—either as potential for the future or what is currently happening at the time of the research. This strength, however, only captures a slice of time and does not address the longer term issues of such research findings, which by themselves, may be an aberration of the period in which the study was conducted. One remedy to this problem can be addressed by longitudinal research.

The following major points are presented in this article:

- Rationale for considering longitudinal research
- Preparation needed to conduct longitudinal research
- Competencies necessary to conduct longitudinal research
- Steps in the process of conducting longitudinal research
- Treatment and analysis of the results of longitudinal research
- Interpretation of the findings of longitudinal research
- Final steps in the longitudinal research process

Why Consider Longitudinal Research in the First Place?

When the results of research are used to modify or improve practice of any type, it is incumbent upon the implementation team to make sure that the results are stable and not transitory in nature. The usefulness of all quantitative data rests on the validity and the reliability of the data collection instrument(s), the quality of the sample selected and the population from which it was derived, and then the quality of the data interpretation by the researcher. So much rests on the research design and data analysis that making wide generalizations to the larger population or problem focus is subject to major error in both analysis and in interpretation.

Longitudinal research, while it does not completely obviate these concerns, can more easily identify and address issues over time than can be done in a single survey distribution. For example, the NABTE survey, now into its 14th and most recent iteration, uses essentially the same questions and format with appropriate updates and modifications (Perrault, 2001).

How Does One Prepare for Such a Research Activity?

Certain steps must be followed when conducting longitudinal research. These steps include beginning with your strengths, building on your history, producing the research instrument carefully, considering the research costs, and developing plans for treating the data.

Begin with Your Strengths

My interest in continuing status studies emerged from a study describing the growth and development of a professional organization—The Business Education Association of Metropolitan New York (BEA): a period spanning some 50 years of the association's history—which then led to my work on the original NABTE questionnaire; thus, I had enthusiasm and experience in the area.

The original project, a cohort study, which I conducted in 1979 (Bronner, 1982), considered the future of business education from the perspectives of our then-current state presidents asking them what they considered to be their states' views on current problems, issues, and trends. Additionally, data describing state membership numbers, publications and frequencies, and related questions were also requested. With the results of this original survey analyzed, it seemed clear that NABTE could benefit from a longitudinal study that could investigate similar issues from time to time from the varying perspectives of each of the state

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Substantial portions of this article appeared in the DPE National Conference's (2001) *Book of Edited Readings*, as it was scheduled for presentation at the DPE Conference in November, 2001. However, after 9/11, this author did not attend, thus this presentation was never made. This article is a revision and extension of that presentation.

presidents. In addition, because NBEA regions differed with regard to their views in these areas, it was logical to analyze state data on the basis of regions as well.

Build on Your History

As you refine subsequent instruments, it is important to carefully review your original instrument and your analyses of the collected data when you draft your new instrument. While the questions and format should remain as close to the original as possible in order to maintain consistency over time, tweaking the instrument is permitted to allow for appropriate revisions. In addition, you should determine how often the survey should be conducted. Too brief a period, no trends may be evident; too long an interval and trends may be washed out. I decided to survey every five years to provide a degree of perspective.

At this point you should continue to involve a jury of experts in the process of evaluating your instrument. Every jury that I used consisted of a representative from each of the five NBEA regions who reviewed the draft instrument, made suggestions and recommendations for improvements, and helped confirm the face and content validity. No jury member, however, served more than once.

Maintaining the instruments' consistency is crucial if you plan to compare apples with apples over a long period of time. However, nothing remains static, so certain questions had to be revised or added in responding to changes in business education policy. Such was the case in the 1988 version splitting funding problems into two sub questions—state and federal sources; and the trend—adding increased graduation requirements in 1994. As can be seen from my 2001 report, some questions receiving notable responses in 1998 were not posed in earlier versions as they were not an issue at that time. It is essential to maintain as much consistency as possible throughout the entire survey period.

Produce the Instrument Carefully

Since a robust response is a primary requirement for any survey, it is important to consider all of the mechanics that go into insuring responses. For example, make sure that your covering letter is clear and adheres to all tenants of informed consent and encourages a prompt and considered response. Offering a summary of the results is a professional obligation and usually enhances response rates. Just don't forget to do so at the conclusion of your study.

The instrument too, of course, needs to be professionally formatted—leaving sufficient space for answers, providing brief yet clear directions, and keeping in mind that pleasing the eye translates into responses. Since my instruments were somewhat lengthy—about 60 questions—it was important to make sure that each page was stapled to insure that the top-of-the-page responses were easy to see and mark. Using slightly colored paper for each distribution—and a slightly different color for each of the two follow-ups—insured that the instrument would be easily seen and less-easily misplaced. A personally stamped, self-addressed return envelope was included in each distribution to make responding easier.

The national office of NBEA was especially helpful in at least two of the distributions as they provided accurate mailing labels for each of the presidents. This enhanced the delivery process as very few packets were returned for incorrect addresses; however, since elections of state presidents occur at different times throughout the year, some questionnaires had to be passed on to the newly-elected officer, which added to the distribution time and response factors.

Consider the Costs

In addition to the expense of developing, duplicating, compiling, and mailing the package, including the costs associated with response envelopes and in subsequent follow up mailings, costs can be a major surprise. In the case of the project illustrated here, more than 50 packages were distributed in the first mailing, and numerous follow up mailings were conducted, all at an estimated cost of $200 for postage alone. Duplication costs added approximately another $100; envelopes (large 9 x 12 for the outgoing phase and either #6 or #10 for responses), another $100. Additional expenses that should be considered include faxes, long-distance telephone calls, and, if necessary, data entry costs and statistical software.

Because increasing numbers of surveys are being electronically distributed and returned, costs of such distribution may be less than with traditional postal mailings. However, expenses still must be considered. While such electronic methods such as email and Internet-based surveys do provide a more rapid response time, research suggests that the response percentage and the results tend not to differ to a great degree. As these methods gain credibility, greater use of electronic survey methods may be anticipated—each with its own inherent problems and successes (Truell, 1997).

Develop Plans for Treating the Data

As you develop the instrument keep in mind how you will treat the data obtained. If you are using numbers, what categories will be appropriate; if you plan on Likert-type scales, what descriptors will be used; if you plan to use groupings, what grouping elements and size will be considered; if you need yes/no responses, how will they be treated; if you have short-answer responses, what categories will they fall into; if you have rankings, what will be the points of separation, and so on. Will you have to transform data by hand or will you use a statistical program that will do this for you; will it be electronically tabulated; likewise, what are your plans for missing data. As you can see, substantial prior planning will ensure a smooth treatment process.

It is important to emphasize at this point, the critical need to think of the analysis phase before you draft the final document. Deciding what tests will be used for analysis and insuring that the data collected adhere to the testing parameters is absolutely essential. While this is true of any research, it is doubly true of longitudinal surveys where consistency is to be maintained if results are to be compared.

Since you will no doubt insure confidentially, coding for follow up mailings should be done. The coding scheme can be very simple, such as the number of the respondent on your master list, preceded or followed by a letter reflecting the mailing sequence. For sample, A48 would indicate the code for your initial mailing to individual number 48 on your master list; B48 would identify the first follow up to the same individual. Finally, consider how you will treat non-response bias, if any. Color-coding subsequent follow-up mailings can be helpful in keeping track of late returns and assist in this process as it will allow you to determine if there are any significant differences in responses between your initial mailing and subsequent mailings. The author has found that follow up responses will usually be more reflective of non-respondents, so if there is little difference between follow ups and those of the original responses, you can be more confident that there is not a problem with non-response bias. Of course, just the opposite is true should there be significant differences between these groups of responses. A minimum of a 50% response should be your objective because only by obtaining responses from more than half of your population or sample can you extrapolate to the larger group from which the sample was drawn; less than 50% and you may never know what the larger segment of your sample thinks (Dilman, 2000).

Competencies Needed for This Type of Research

There are a number of important competencies needed by the researcher to conduct successful research; however, for longitudinal research, these basic skills are compounded by the fact that one must be committed to the project over an extended period of time. This means that complete records and files must be maintained, consistency in data treatment confirmed, and a long view taken before the project is completed. When speaking of this, you should have an ending date in mind to bring the total activity to a successful conclusion.

Related issues to be addressed include the changing population of the respondents—and their shifting positions and roles due to the changing environment throughout the time of each survey. The human subjects consideration may also be a thorny issue. What is your institution's policy on survey research? Do you have to obtain approval for each instrument distribution or can a blanket approval be obtained? Not the least of these related issues is the decision of when to begin the treatment and analysis process. Do you begin with the writing of each survey draft distribution or do you wait until all follow-ups are in before you begin this process? These issues, all of which are elements of conducting basic survey research, are compounded (or confounded) by the nature of the longitudinal construct.

The treatment phase could begin when the first set of returns arrives to begin your data entry. Doing this early will not only maintain your interest and enthusiasm in the project but will also allow for a preview snapshot of eventual results; sort of providing a hazy road map of what is to come. Any obvious glitches in your respondents' interpretation or misreading of questions can be addressed at this early stage—even to the point of an interim mailing alerting your respondents to this issue. Electronic contacts such as email and the Internet can be very helpful here, too.

The Sequence and the Steps of Conducting the Survey(s)

What to do when and why are always of critical interest in conducting research, and this is even more important in longitudinal research where the time frames differ. According to the survey researcher guru, Don Dilman, timing of survey mailings is important in enhancing response rates. Schedule mailings during periods where your respondents are available and not overwhelmed. Faculty, for example, may be less inclined to respond to a survey during peak academic periods at the beginning or at the end of a term—or over the summer months. Likewise, mailings over holiday periods or during the tax season for busy professionals will often go unanswered or even discarded. This means, of course, that in longitudinal research, selecting a time frame appropriate for your respondent, and maintaining the consistency of that time frame over the many subsequent distributions is important.

Procedures for the collection of the returns—the responses and non-deliverables—should be considered not only for the original mailings but for the follow-ups as well. A secure return location and frequent pick-ups are necessary to maintain ongoing control over each survey and follow up mailing. In addition, coding responses for the follow up process and deciding early-on if a replacement procedure will be followed if your first respondent declines to participate or is not available. For example, will the State Vice-President or another elected officer be an adequate replacement? These are important factors in this ongoing process and must be considered for each of your mailings.

Treating and Analyzing the Results

While it was mentioned earlier, it's important to repeat it again here—carefully consider the treatment and analysis of your data before you send out that first package. The adage "act in haste, repent at leisure" is never more true than here. The following recommendations may be followed for traditional surveys but consistency is even more important when dealing with longitudinal studies.

If you have conducted a pilot study, you will have an idea of a number of important elements: postage costs, time-to-delivery, non-deliverables, response rates, and, perhaps most importantly, an idea of what you can expect in the nature of the results. The pilot study results allow you to glimpse what you can expect in future responses. As such, you should consider a pilot an essential component of your study and one should be conducted every time you send out a new survey. In the case of elected officials in this illustration, a pilot may be considered using a few former state presidents or even those officers in your local professional association. As few as 10 to 15 individuals may suffice for the pilot study.

You've now collected the first batch of your returns and it is time to begin the treatment phase. This should begin by confirming returns against your master list and logging in the responses by date and, possibly, by time. Once that has been accomplished, researchers need to review instruments, enter data, record qualitative information, provide for follow up responses, treat the results, and analyze the findings.

Review Instruments

Make sure that each instrument received is complete with all responses marked. You may want to use colored ink or small post-it notes to identify missing or incomplete data. While these types of data may be addressed through the missing data segment of your statistical program you may also be able to interpret or infer responses based on other completed elements of the instrument. In some cases, however, you may have to either eliminate the question entirely from the individual's response set or to use only partial data if provided (e.g. asking for a ranking of five items when only three are either ranked or checked off). Once this decision is made on the first instrument reviewed, all subsequent instruments with similar problems should be treated in a like manner. Likewise, when asking for numeric data such as membership numbers, which may vary widely, you may want to use the raw numbers provided until you have a sense that categories, rather than exact numbers, are more appropriate. You can then cluster these data into appropriate categories. Take your time here.

Enter Data

Should your instrument only have a limited number of numeric data points, using a statistical package may not be crucial; however, for most survey research, I would recommend that the most recent version of SPSS be considered. You will find that the adage of "pay me now or pay me later" is all too true and the time and energy of obtaining and learning how to use such a statistical program pays off with the passage of time.

Finally, select your data categories carefully and give them full titles whenever possible. Codes, numbers, and abbreviations have an evil way of dropping out of sight and memory as time passes.

Record Qualitative Information

In most cases, you will have a section for respondent comments or reactions, which must be recorded in some fashion. Hold off on recording this information until you have read through a number of your responses in order to get a feel for the nature of these comments. The original responses may change character with follow-up results, and you will want to make sure that your categories are inclusive and accurate.

It is also a good idea to formulate and use some key words to highlight qualitative responses. You can use these key terms to categorize lengthy responses in order to return to them at a later time as you prepare your report. Some respondents may provide only a few words, some of which may be important; others may be more critical. Lengthy responses may need summarization and/or interpretation in order to provide depth to the numeric data. Allowing space for and encouraging such comments is a requirement earlier discussed. These comments may well influence your future surveys by adding new questions or elements to them and enriching the next survey distribution.

Provide for Follow Up Responses

In all probability, because you will not receive responses from all of your addressees on the first mailing, plan for at least two subsequent follow up distributions. These mailings should be planned about two to three weeks apart, following your original mailing in order to give sufficient time for the first returns to arrive. If the author's experience and history is any guide, you should anticipate receiving about 65% of all returns from the first mailing, another 25% from the first follow up, and a final 10% from the second follow up mailing. Provide a new covering letter for each subsequent mailing and make sure that all of the instruments are included, including the stamped, self-addressed return envelope. Color coding the instruments as well as using a numeric coding process for each of your mailings will allow you to visually maintain control over each response and analyze them according to the early/late issues discussed previously.

Statistical Treatment of the Results

Treating the results of any survey follows a rather traditional pattern, based on the nature of the research questions posed or the hypotheses developed. These methods include, but are not limited to, descriptive statistics, t-tests, analysis of variance, correlation coefficients, and the like. Use t-tests for a comparison of two means; ANOVA for comparing multiple means; and use correlation analyses for relationships. These treatments are even more critical when you consider that subsequent surveys will be conducted and identical treatments will be involved for each survey.

In the case of the project described here, treatment included descriptive data identifying responses by each state and by each region; numeric and ranking details of problems, issues, and trends; membership numbers and nature and frequency of professional publications. Correlations and analyses of means, including Pearson, Spearman, and ANOVAs were also performed.

Analyze the Results

After you've treated your data, it is time to consider what they all mean. Remember that statistical significance does not always equate to meaningfulness and vice versa. Consider the alpha level for the former—usually .05 (Kerlinger, 1986), and common sense for the latter. If you have developed hypotheses, significance is a relatively easy task. When dealing with qualitative data, however, you must shift to an interpretation of the respondents' comments in order to make sense of them. For example, increases in association membership over time may show statistical significance; however, these numbers may not be meaningful in the larger sense, especially when a small base is involved. On the other hand, dramatic declines or other important changes may be both meaningful as well as statistically significant. Shifting trends, likewise, may be the result of outside influences such as changes in graduation requirements or funding, over which we may have little control. Only over a period of time can these trends be observed and analyzed; again, this is a strength of longitudinal research.

Making Sense of the Findings

What does it mean? How can we interpret these results? What impact may they have on policy, on demands for our field, or for future curricular changes? This is the point at which a long-term view is possible only through the evaluation of earlier reports and how they have evolved over time. Suggestions for this phase of your research include ranking the findings, conducting individual follow-ups, maintaining contact with the literature, and reflecting on your findings.

Rank the Findings

There will be much to consider as your surveys evolve. Whether you decide to rank the results beginning with the second or third survey or wait until the final results are in hand, it is important to consider which of your many findings will be of sufficient importance to consider seriously. Remember to compare apples with apples and think carefully about any changes that you have observed. Were changes the result of local, regional, national issues or of the personalities and opinions of the respondents?

Follow Up Individually

Don't hesitate to contact your respondent(s) when you receive confusing (or interesting) information. It is a measure of your concern and interest, and your respondent will probably appreciate your inquiry. The results of such a discussion can add a richness and depth to what may be somewhat cold or impersonal data. This contact may also clarify issues of confusion, which may exist at the time of the individual's response.

Maintain Contact with the Literature

As you compile and analyze your data, continue to keep current with your related literature, as this may offer insights not previously available during the original or subsequent survey distributions. What new developments have occurred, cited in the literature, that your findings may have anticipated or missed, and what new analyses may have been suggested in this new literature that you might consider or readdress? These are but two obvious areas of review and the results will show evidence of your currency with recent literature.

Reflect on Your Findings

We tend to see our particular tree very clearly but not so often the forest within which it grows, so take a step or two back and reflect on what it all means in the larger picture. What obvious changes have occurred over the passage of time? What unanticipated responses pop out during this review? To what degree did earlier comments mirror the present ones and to what degree did they vary significantly? Return to a global view for your study and try to ascertain how things have changed or, perhaps more importantly, how things may have not changed over this period and remained static.

During this time it is also appropriate to think about your next survey, in the event that you continue this project. What changes need to be addressed in the next iteration; what new or modified sample needs to be involved; and how can you improve on the instrument, the distribution, the treatment, and the analyses? By giving some considered thought early on, your next study will be that much improved, and your insights that much more sharpened.

Final (or next) Steps

We now come to the final or next steps in this activity, as there still is much to do before putting closure on your research. Attention should be directed to three of the following critical issues: replies to respondents, communication of the results, and recommendations.

Reply to Respondents

As noted before, you probably asked respondents if they would like a copy of the results or a summary of the findings. Research ethics require you to carry through on this promise even though it may be one of the last things on your mind. Do it now! Since you will probably be developing an article or research presentation based on your research, you'll need to develop an abstract of your work. This is the ideal time to include your respondents in this process. Prepare your abstract—usually from 200 to 350 words—and then mail it to each of your respondents along with a covering note of thanks. They will appreciate hearing from you and learning how their contributions fit into the fabric of your results. You should do this with each survey iteration, of course, but you should couch this abstract in terms of ongoing research or ongoing findings since the final work is still in process. Your respondents will thank you for your consideration and, in turn, will be even more eager to participate in future surveys.

Communicate Your Results

Naturally you will communicate the results of your research! This can be done in the form of one or more articles for publication; in the form of presentations at local, state, regional, national, or even international venues, such as Delta Pi Epsilon (DPE), the International Society for Business Education (ISBE), the National Business Education Association and the National Association for Business Teacher Education (NBEA/NABTE), or the Organizational Systems Research Association (OSRA), and/or in cross-professional events such as the Accrediting Council for Independent Colleges and Schools (ACICS), the Association for Career and Technical Education (ACTE), the American Educational Research Association (AERA), Phi Delta Kappa (PDK), as well as to your own faculty colleagues. Presentations, whether in writing or oral, can focus on the overall project and your findings, or on specific areas of audience interest such as method or data treatment. You have learned something—so make sure you communicate it.

In addition to the above it is also your responsibility to communicate your findings and recommendations to interested policy forums as appropriate. In the study illustrated, NBEA officials, elected state and regional officers, as well as the *NABTE Review* were involved in this process. By communicating your findings and recommendations, your research makes a contribution to our professional field.

Recommend Policy Changes

It is very appropriate to make recommendations for policy revisions to those agencies most affected by your findings. If your findings suggest that changes in procedures would enhance productivity or performance, let the appropriate agency know about them. Should you find flaws or gaps in legislation that can be addressed by your elected officials, let them know about it. If professional practices can be improved as a result of your findings, communicate this to the appropriate offices or departments. It is often said that all good research usually leads to more research, but this can only be accomplished if you communicate your findings and recommendations where they will do the most good. It is your responsibility to take charge of your research and to let others know what you found and what it meant. The implications of such are like a pebble dropped into a quiet pond—the ripples spread widely and in all directions.

Longitudinal research provides us with a panorama of activities and events, each of which can be captured by a snapshot of a single research activity. It is the extensive timeline perspective of this panorama that allows us to view problems, issues, and trends over this broad landscape of time. It is not an easy task; but it is one of immense value to our profession.

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E-Commerce Education:
A Comparison of Employers' and Business Educators' Perceptions

Lisa E. Gueldenzoph
North Carolina A&T State University

Abstract

Because e-commerce is a relatively new content area for business educators, it can be a difficult course to develop for the university level. Many e-commerce textbooks include concepts that relate to computer science, management information systems, marketing, desktop publishing, and other business and technological areas. To find an effective mix, this study seeks to identify a core group of e-commerce competencies as deemed relevant by both business educators and business employers.

Introduction

If your department's curriculum committee approved the addition of a new e-commerce course to your business education program, and you were asked to teach it, where would you begin? How would you decide what to teach and which book(s) to select? As a relatively new content area, e-commerce can be a difficult course to develop. Unless you graduated recently, you probably have not taken a class in e-commerce. Unless someone else you know has taught it, you probably do not have a syllabus as a reference.

The course development of an effective e-commerce class can be a difficult task. Mitchell (2001) cited three reasons: (1) international debate about the meaning of the term e-commerce, (2) continual development of new technologies that enable the creation of new business practices, and (3) the failure of many e-commerce (dot.com) businesses followed by the emergence of new business models. The lack-luster growth of the dot.com industry exemplifies the notion that e-business requires more than applying traditional methods to an electronic economy. Indeed, e-commerce is changing the foundational philosophies of how organizations do business (Rosenbaum, 2000). Therefore, it is imperative that business education programs not only offer e-commerce courses, but offer courses that provide the specific content and criteria necessary to successfully prepare students for business in tomorrow's e-world. Thus, the purpose of this research is to specifically identify the competencies appropriate for an e-commerce course offered by a university-level business education program as perceived by both business educators and employers.

Review of Literature

E-commerce – generically defined as conducting business online – is more than Web page development. But how much more? A review of recent literature suggests that e-commerce encompasses a breadth of content and criteria. Archer and Yuan (2000) suggest that information and communication form the core of e-commerce; therefore, technology should be "used to encourage and facilitate customer-business relationships" (p. 385). From web site development and infrastructure design (Bontis & DeCastro, 2000) to emerging marketing communication theory and human performance (Harmon, 2001), e-commerce impacts virtually all aspects of business.

In Ohio, the state's Tech Prep program created an e-commerce marketing competency profile that provides a curricular framework for course content from the high school level through associate degree (Ohio State Department of Education, 2000). The competencies, which are categorized into 31 distinct units, cover both technical skills and knowledge in areas such as digital graphic design, product mix and promotion, online partnerships, marketing management, and security/privacy issues. At the high school level, all of these areas fall under the auspices of a business department taught by business education teachers. However, at the university level, the business school/college comprises several departments including (but not limited to) management, marketing, finance, economics, administration, and (sometimes) business education—all of which have a relationship to e-commerce.

"Some universities have added a concentration in e-commerce … others are adding majors, certifications, or degrees" (Dobbs, 1999, p. 62). If e-commerce can evolve into an entire degree, which concepts are applicable to a single course? Because the identification of appropriate e-commerce competencies for a university-level business education course are difficult to define, this study seeks to determine a list of competencies as identified by employers and educators.

Objectives and Need for Project

The following outcomes are predicted upon completion of this research project:

1. A comprehensive list of e-commerce competencies (knowledge and skills) will be developed from recent e-commerce textbooks and a review of related literature.

2. From the comprehensive list, a modified list will be developed that specifies the content and criteria applicable to an e-commerce course offered by a university-level business education program. This revised list will be created based on the perceptions of both business educators and business employers.

3. Finally, a proposed course syllabus and specific recommendations will be outlined for business education e-commerce course developers.

These outcomes are important because e-commerce is a diverse and dynamic content area. It is diverse because it incorporates the elements of both computer science (networking, programming), management information systems (hardware, software), and traditional business courses (marketing, sales, management). It is dynamic because new technologies and communication systems are continuously changing the means and methods of e-commerce. In order to effectively prepare today's business education students, our course content must also be diverse and dynamic. By identifying the core competencies of e-commerce and ranking these competencies by both business educators' and business employers' perceptions, e-commerce course developers will be armed with the content and criteria necessary to ensure business education students' knowledge and skills for tomorrow's economy. This research is distinctive as it triangulates the perceptions of textbook authors/publishers, business educators, and business employers.

Methodology

The study began June 1, 2002, with a grant from the Delta Pi Epsilon Research Foundation. During the summer months, the researcher conducted a comprehensive analysis of over 30 recently published (2002, 2003) e-commerce textbooks. Using the textbooks' tables of contents and indexes as well as supplements from recent research (Ohio State Dept. of Education, 2000; Sagi, 2000), an alphabetical list of content (knowledge and skills) was created (see E-Commerce Competencies listed in the Findings). Based on this list, a Likert-scale survey instrument was created.

In September, a pilot study to ensure validity and reliability was conducted with a convenience sample of business education professors and local area business people. Minor revisions were made to the survey instrument. The survey population includes two subgroups: (1) business educators and (2) business employers. The 104 business educators were listed in the October 2001 *Business Education Forum* as contact persons for the institutions offering degrees or licensure in business education. The employers were randomly selected from the 240 regional, national, and international companies whose contact information was obtained from the North Carolina A&T State University career fair database. A total of 200 participants (100 from each subgroup) were targeted. In October, survey instruments were coded and mailed with return postage; follow-up mailings to non-respondents were sent in November.

The quantitative data will be analyzed using descriptive and correlational statistics (SPSS). The significant findings will be identified in a short report and mailed to the focus group participants prior to their telephone interviews. The survey mailing included a separate sheet that requested participants to provide their telephone numbers as an indication of their willingness to participate in focus-group style telephone interviews, which will occur in December and January. The focus group participants will be called and questioned about their perspectives of the findings. These interviews will be recorded (with permission) and transcribed by clerical support personnel. Qualitative research methodology will be used to thematize the transcripts to provide a rich context for the numerical results.

Findings

As this study is a work in progress, the data collection procedures are not complete at this writing. However, the first objective of the study is finished. A comprehensive list of 150 e-commerce competencies (knowledge and skills) was developed from recent e-commerce textbooks and a review of related literature. This list served as the foundation for the survey instrument that was distributed to employers and educators for their consideration. Many of the competencies are related and may overlap; however, for clarification purposes, they are listed in alphabetic order. The survey instrument asks participants to identify each competency's relevance to a university-level e-commerce course offered by a business education department for all business students. The Likert-scale responses will include four levels of relevance: (1) those competencies that are absolutely necessary for an e-commerce course, (2) those competencies that are nice to know about, but are not absolutely necessary for an e-commerce course, (3) those competencies that are not necessary, and (4) don't know. The participants are instructed to check "don't know" if they are not familiar with the e-commerce competency.

E-Commerce Competencies:

1. Advertising/Promotion on the Web
2. Application Servers and Database Servers
3. Asynchronous/Synchronous Business Activities
4. Authentication (Digital Signatures)
5. Backup and Recovery
6. Bandwidth
7. Banking Online
8. Boolean Searching
9. Business Models/Strategies/Planning
10. Business-to-Business (B2B) Transactions
11. Business-to-Consumer (B2C) Transactions
12. Business-to-Employee Applications
13. CGI
14. ColdFusion

15. Computer Crimes
16. Computing Platforms (Host-Based, Client/Server, WWW)
17. Creating Business Value
18. Creating Consumer Value
19. CSS
20. Customer Relationship Management
21. Cyberbanking
22. Data Compression
23. Data Mining
24. Data Transmission Protocols
25. DHTML
26. Digital and Analog Signals
27. Digital Payment Systems
28. Digital Transmission Services
29. Directory Services
30. Domain Names
31. Dynamic Data Access
32. E-Commerce Agents
33. E-Government
34. Electronic Data Interchange (EDI)
35. Electronic Marketplaces and Portals
36. E-Mail Marketing
37. Encrypting Data (Symmetric Key and Asymmetric Key)
38. Encryption Export Policy and Key Recovery
39. Entrepreneurship
40. ERP Systems
41. Establishing an E-Community
42. Ethical Issues in E-Commerce
43. Etiquette Issues in E-Commerce
44. Extranets
45. File Transfer Protocol (FTP)
46. Financial B2B Services
47. Firewalls (Routers and Gateways)
48. Fraud
49. FTP
50. Graphic Design
51. History of E-Commerce
52. History of Internet
53. History of Search Mechanisms
54. HTML
55. Hypertext/Hyperlinks
56. Information Agents (Intelligent Agents)
57. Information Technology Platform for E-Business
58. Intellectual Property
59. International Electronic Commerce
60. Internet Consumers
61. Internet Protocol (IP)
62. Internet Security Requirements
63. Intranets
64. Investing/Trading Stocks Online
65. IP Security Privacy (PGP)
66. Java/JavaScript
67. Layer Two Tunneling Protocol (L2TP)
68. Legal Issues in E-Commerce
69. Local Area Networks (Ethernet, Wireless)
70. Mail Client
71. Mall-Style Hosting
72. Management Models of E-Commerce
73. Market Research
74. Marketing Strategies/Plans/Tactics
75. Media Convergence
76. Meta-Search Engines
77. Mobile Commerce (M-Commerce, Mobile Agents)
78. Modems (PC, Cable, DSL)
79. Modulation - Amplitude (AM) and Frequency (FM)
80. Multimedia Graphics
81. Multimedia Sounds
82. Multimedia Standards and Protocols
83. Multiplexing
84. Network Infrastructure/Communication
85. Network Media (Coaxial Cable, Fiber Optic, Wireless)
86. Nonrepudiation
87. Online Databases
88. Online Publishing
89. Open Systems Interconnection (OSI) Model
90. Outsourcing Logistics (Shipping)
91. Packet Switching Networks
92. Packet-Switched Networks
93. PAP/CHAP
94. Payment Systems (E-Cash, Smart Cards)
95. PCT
96. PDF
97. PERL
98. PHP
99. Portals
100. Privacy Issues
101. Proxy Servers
102. Real Estate/Insurance Online
103. Retailing
104. Revenue Models
105. S/MIME
106. Search Engine Positioning
107. Search Strategy
108. Secure Socket Layer (SSL)
109. Security Audits
110. Security Levels (organization, client, third party)
111. Security Policy Development
112. Security Threats
113. SGML
114. Single Sign-On (SSO)
115. SML
116. Social Issues of E-Commerce
117. Software Agents
118. Supply Chain Management
119. SWOT Analysis
120. Taxation Issues
121. Telephone Networks
122. Transaction Processing Systems (TPSs)
123. Transport Control Protocol (TCP)
124. Hypertext Transfer Protocol (HTTP)
125. Transport Layer Security(TLS)
126. Universal Resource Locator (URL)
127. Value-Added Issues

128. VBScript
129. Videoconferencing
130. Virtual Community and Portal Strategies
131. Virtual Private Networks (VPNs)
132. Virus Protection
133. Web Auctions
134. Web Clients/Servers
135. Web Page Authoring Tools
136. Web Page Content Development
137. Web Page Design Principles/Tools
138. Web Page Forms
139. Web Page Frames
140. Web Page Images
141. Web Page Programming Tools
142. Web Page Resources
143. Web Page Tables
144. Web Presence
145. Webcasting
146. Wide Area Networks (WANs)
147. Wireless Application Protocol (WAP)
148. Wireless Local Loops
149. Wireless Telephony
150. XML

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Master Teachers Helping Future Teachers

Margaret J. Erthal
Illinois State University

Randall E. Smith
Southern Illinois University

Abstract

Pairing experienced teachers with perspective teachers is a learning/mentoring process called student teaching. This study went one step farther and incorporated technology into the experience. Cooperating teachers and university student candidates met on campus twice during the semester to learn, create, and design technology experiences for their students. The products they developed were shared and critiqued by their peers prior to inclusion in the classroom. Participant reflection statements were collected at the end of the study.

Introduction

A recent Commerce Department Report (A Nation Online, 2002) said very few technologies have spread so quickly or become so widely used as computers and the Internet. In September 2001, 66% of the U.S. population were online. Children and teenagers use computers and the Internet more than any other age group. Students ages 5-9 use the Internet at school 25% of the time, while school Internet use practically doubles for ages 10-13. During 1999, the number of computers in schools increased 13% for a total of 6 million (Plugged In, 2002). In 1997, 68.8% of students used computers at school (Digest of Educational Statistics, 1999). Research indicates that teachers are not comfortable with technology and are unsure of how to integrate it into their lesson plans, activities, and teaching (Becker, 1999; McKenzie, 1999a, 1999b; Technology Counts, 1999).

According to a study by Becker (1999), there has been a 157% increase in the number of Internet connections in schools between 1994 and 1998. However, only 46% of teachers reported gathering information from the Internet for their classes. Additionally, just 16% of teachers communicated by e-mail with teachers from other districts. Teachers who possess and are confident of their computer skills are more likely to use the Internet themselves and create meaningful activities and projects that require Internet use of their students.

Technology Counts '99 (1999) surveyed more than 15,000 teachers from elementary through high school regarding their technological expertise and knowledge. The findings indicate that many teachers lack the time and training to make the best use of technology and still rely on textbooks to provide instruction. Teachers cite a lack of time to prepare or try out new software as a hindrance to utilization. The most helpful training was being shown how to integrate technology into the curriculum. Only 29% of teachers said they had more than five hours of technology training in curriculum integration during the past year. Professional development should include opportunities for teachers to discuss and share their experiences.

The above information points to the fact that many teachers appears to possess, at most, the minimum skills and knowledge to utilize technology effectively in the classroom. A 1999 Market Data Retrieval survey reported that more than 60% of teachers indicated they were not well prepared to use technology in their classrooms (McKenzie, 1999b). One reason is the lack of training. While computers are being purchased and placed in classrooms, money and time for instruction is small or nonexistent. Without basic training teachers cannot be expected to fully integrate technology into the curriculum. Teachers need to be better prepared to help students function in a technology-based environment where employees work as a team (Wheelwright, 1999). There has been far too much spending on equipment and too little on professional development (McKenzie, 1999b). School districts need to make technology preparation a complete program of staff development (Technology Counts, 1999).

The role of colleges and universities cannot be overlooked. The National Council for Accreditation of Teacher Education stated that a majority of teacher preparation programs are falling far short of what needs to be done in the area of technology training (Technology Counts, 1999). A survey by the International Society for Technology in Education concluded that teacher preparation programs are not giving future teachers the kinds of experiences they need to be prepared to use technology in the classroom (International Society for Technology in Education, 1999; Technology Counts, 1999). In fact, researchers found most institutions believed their technology infrastructure was adequate. Yet, most faculty did not model the use of technology skills in their teaching. Pre-service teachers often learned technology skills in stand-alone courses that did not correlate well with their ability to integrate technology into the curriculum (International Society for Technology in Education, 1999).

Project Goal

The goal of this project was to enhance and expand the interaction of technologically- advanced teachers with university student candidates. The project provided avenues of methodological exploration for teachers using technology and assisted future teachers in integrating technology with their schools. This new model of preparing future teachers should invigorate the use of computer technology in the classroom and should provide greater satisfaction for teachers.

Methodology

Technology-competent teachers, who had been assigned university student candidates, were selected based on educational attainment, district tenure, demonstrated expertise with infusing technology into the classroom, and the principals' recommendation. Two teachers were second-grade teachers, one was a third-grade teacher and one was a fifth-grade teacher. The second-grade teachers were from the same school and the third- and fifth-grade teachers were from the same school. A total of ten people were involved: four teachers, four university student candidates, and two university instructors. The university instructors were recognized for their experience with technology, teaching technology-related classes, and giving technology presentations. The instructors obtained an internal university grant to administer the project.

Participants met in a classroom with Pentium IV multimedia computers twice during the project. Prior communication with the participants indicated that they were interested in learning the advanced features of presentation graphics software and general features of spreadsheet software. They believed these two packages would be most useful to them and their students. The presentation graphics would allow students to perform creative writing activities and spreadsheets would be used for math and graphing.

During the first meeting, advanced features of a presentation graphics package was given by one instructor and displayed on a smart projection board. Participants were able to ask questions and make suggestions related to the presentation. The teachers and the university student candidates were then asked to create a presentation that they would be able to use at their schools. The instructors circulated among the participants to offer help and suggestions related to the presentation project. The teachers indicated that student testing was upcoming and presentations would be developed to aid students in preparing for the tests. One group used a digital camera to personalize the presentation while another group incorporated sounds to accompany the slides. At the end of the day the groups shared their presentations with their peers.

There was approximately one month between meetings and the second gathering focused on using the spreadsheet in the classroom. Since participants were not as well versed with the spreadsheet, more instruction was provided through the use of previously-created data and printouts. For example, a fictitious three-year table of trees was used to categorize information, create pie charts and graphs. Formatting techniques were explored such as the use of color, fonts, spacing, and other skills to enhance presentations. Next participants worked along with the instructor to create a grade book which used formulas and functions to weight grades and a lookup table to assign letter grades.

Conclusion

This project accomplished two major objectives: (1) providing classroom teachers time to hone their computer skills and (2) creating an environment that allowed the classroom teachers to bond as a team with each other and the university student candidate. With the knowledge and skills learned and practiced, these teams, along with the University faculty, became a resource for problem solving and using the computer as an instructional delivery tool. An additional objective was to promote the classroom teacher as a source and leader in their respective schools. Both of these major objectives were accomplished.

At the final meeting, participants were asked to share their impressions of the project. All were positive about the results and what they had learned. They had plans in place to integrate technology into the curriculum for the benefit of the students and themselves. Participants were asked to respond to "Reflections Statements" in order to evaluate the project. Following are the reflection responses:

What I learned:	· How to use a presentation graphics and spreadsheet package.
	· To incorporate technology into future lessons. I would need more practice with the spreadsheet package.
	· How to use the presentation graphics package in my classroom.
	· That I can use the spreadsheet package for different purposes; especially, the charts to show student progress.
	· How to make an effective presentation; record and average students' grades; not to be afraid of technology.
	· That software can be used for a variety of purposes and are useful in the educational field.
	· I become much more familiar with the packages.
	· There is so much more to learn. I walked away with something useful.
What I liked about the way I learned:	· The atmosphere of a small group and I could get help quickly.
	· The hands-on time. Patient and knowledgeable instructors. Small group instruction

continued

	· Lots of one-on-one instruction. Very knowledge instructors. · The informal and relaxed atmosphere. · A very non-threatening experience with time to practice and explore software. · Hands-on instruction and knowledgeable instructors. · Doing and creating rather than watching; small group. · The only way to learn is hands-on. I had the time and freedom to explore.
What I disliked about the way I learned:	· Nothing · I was too far back from the screen. · I would have liked to learned additional software packages. · More sessions would be great.
What I wish I could have learned:	· This sooner. · More about the presentation graphics package. · More and had more classes. · More software packages. · More programs related to the education field. · Have a condensed "cheat sheet" to take back.
I plan to share what I learned by:	· Using it in my classroom and telling/helping future coworkers. · Sharing with my colleagues and trying some ideas with my class. · Using presentation graphics in my classroom and encouraging students to create projects to accompany the lessons. · Using the presentation graphics package to show proper exit procedures during emergencies. · Putting what I've learned into practice. · Giving presentations and allowing students to create their own presentations. · Using what I learned and having students keep track of student charts and encourage other teachers or help them create some projects. · Having my students use the presentation graphics package for a guided research report. The graphing will be useful, too.

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PO Box 4340; Little Rock AR 72214

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E-Mail Address: dpe@ipa.net

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